

## Individual Papers Reviewers

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### **Working Papers Reviewers**

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# Program Overview

## Thursday, 26 February 2015

11:00am-8:00pm REGISTRATION  
3:00pm - 5:30pm SCP Executive Committee Meeting  
6:00pm - 8:00pm RECEPTION  
6:00pm - 7:30pm WORKING PAPER SESSION 1

## Friday, 27 February 2015

7:00am - 8:00am Zumba Class  
7:00am - 8:00pm REGISTRATION  
7:30am-8:15am BREAKFAST  
8:15am - 9:30am SESSION 1  
9:30am - 9:45am BREAK  
9:45am-10:45am PLENARY SESSION 1: Elizabeth Loftus, University of California, Irvine  
10:45am-11:00am BREAK  
11:00am - 12:15pm SESSION 2  
12:30pm-2:00pm LUNCHEON AND PRESIDENTIAL ADDRESS  
2:15pm-3:30pm SESSION 3  
3:30pm-3:45pm BREAK  
3:45pm-5:00pm SESSION 4  
4:00pm -4:50pm JCP AE Research and Report  
5:00pm-6:30pm JCP ERB Meeting  
6:00pm-8:00pm RECEPTION  
6:00pm - 7:30pm WORKING PAPER SESSION 2

## Saturday, 28 February 2015

7:00am - 8:00am Power Yoga  
7:00am-3:45pm REGISTRATION  
7:00am - 8:00am SCP Advisory Panel Breakfast Meeting  
7:30am-8:15am BREAKFAST  
8:15am-9:30am SESSION 5  
9:30am-9:45am BREAK  
9:45am-10:45am PLENARY SESSION 2: Robert Cialdini, Arizona State University  
10:45am-11:00am BREAK  
11:00am-12:15pm SESSION 6  
12:30pm-2:00pm AWARDS AND BUSINESS LUNCHEON  
2:15pm - 3:30pm SESSION 7  
3:30pm-3:45pm BREAK  
3:45pm - 5:00pm SESSION 8  
5:30pm-11:30pm OFF-SITE EVENT: The Great GatSCPy Celebration at the Wrigley Mansion

# Thursday, 26 February 2015

**REGISTRATION**

**11:00am-8:00pm**

**SCP Executive Committee Meeting**

**3:00pm - 5:30pm**

**RECEPTION**

**6:00pm - 8:00pm**

**Ballroom**

**WORKING PAPER SESSION 1**

**6:00pm - 7:30pm**

**Ballroom**

*Working Papers: Working Paper Session One*

# Friday, 27 February 2015

Zumba Class  
7:00am - 8:00am  
Clara Vista Room

REGISTRATION  
7:00am - 8:00pm

BREAKFAST  
7:30am-8:15am

SESSION 1  
8:15am - 9:30am

*Symposium: Not Always Negative: The Antecedents and Consequences of Low Personal Control*

*Symposium: A Matter of Taste: Consumer Tastes and Judgments of Artistic Quality*

*Individual Papers: Understanding the Fourth Dimension: Time*

*Individual Papers: Why I Buy: The Self and Consumption*

*Individual Papers: The Devil is in the Construal Level: Construal Theory Effects*

*Individual Papers: The Benefits of Marketer Transparency*

BREAK  
9:30am - 9:45am

PLENARY SESSION 1: Elizabeth Loftus, University of California, Irvine  
9:45am-10:45am  
Ballroom

BREAK  
10:45am-11:00am

SESSION 2  
11:00am - 12:15pm

*Symposium: When We Are Together: The Dynamics in Shared Goal Pursuit*

*Symposium: Construction of Risk Preferences*

*Individual Papers: Risky Business: Risk and Uncertainty*

*Individual Papers: # Social Media*

*Individual Papers: Making Healthy Decisions: Consumer Health and Nutrition*

*Conversations: Consumer Memory*

**LUNCHEON AND PRESIDENTIAL ADDRESS**

**12:30pm-2:00pm**

**Ballroom**

**SESSION 3**

**2:15pm-3:30pm**

***Symposium: Hollywood-Plus: Novel Avenues of Celebrity Influence***

***Symposium: How Extraneous Numerical Markers Bias Consumer Judgment and Choice***

***Symposium: Social Media Experience: Implications for Well-Being, Word-of-Mouth, and Brand Consumption***

***Individual Papers: Consumer Responses to Prices***

***Individual Papers: What You do To Me: The Effect of Others***

***Individual Papers: Prospection and Retrospection: Understanding how Consumer's Look Ahead and Look Back***

**BREAK**

**3:30pm-3:45pm**

**SESSION 4**

**3:45pm-5:00pm**

***Symposium: Landfill Overload: The Psychology of Disposal Decision-Making***

***Symposium: Information that Moves Us: Understanding the Dynamic Drivers of Consumer Motivation***

***Individual Papers: Affect, Asymmetry and Multiculturalism: Novel Insights into Decision Making***

***Individual Papers: It's The Little Things: The Impact of Perceptual Cues***

***Individual Papers: Happiness, Jealousy and Guilt: New Perspectives on Discrete Emotions***

***Individual Papers: In the Eye of the Beholder: The Impact of Beauty on Choice and Judgment***

**JCP AE Research and Report**

**4:00pm -4:50pm**

**JCP ERB Meeting**

**5:00pm-6:30pm**

**RECEPTION**

**6:00pm-8:00pm**

**Ballroom**

**WORKING PAPER SESSION 2**

**6:00pm - 7:30pm**

**Ballroom**

***Working Papers: Working Paper Session Two***



# Saturday, 28 February 2015

Power Yoga  
7:00am - 8:00am  
Clara Vista Room

REGISTRATION  
7:00am-3:45pm

SCP Advisory Panel Breakfast Meeting  
7:00am - 8:00am

BREAKFAST  
7:30am-8:15am

SESSION 5  
8:15am-9:30am

*Symposium: New Perspectives on Power: Discovering Novel Effects of Power In Consumer Social Relations*

*Symposium: Imagine all the Products (and People): New Insights into the Processes and Consequences of Consumer Imagination*

*Individual Papers: Understanding Brand Relationships and Brand Meaning*

*Individual Papers: The Study of Bling: Antecedents and Consequences of Luxury Consumption*

*Individual Papers: Getting Personal: Ego, Identity and Consumption*

*Individual Papers: Filling up the Tank: Research on Food Decisions*

BREAK  
9:30am-9:45am

PLENARY SESSION 2: Robert Cialdini, Arizona State University  
9:45am-10:45am  
Ballroom

BREAK  
10:45am-11:00am

SESSION 6  
11:00am-12:15pm

*Symposium: Expectancy and Placebo Effects of Marketing Actions*

*Symposium: When Do We Want a Partner in Crime?*

*Individual Papers: Consumer Processing of Attribute Information*

*Individual Papers: To Have and to Hold or To Do and Remember: Experiential and Material Purchases*

*Individual Papers: Tight Wallets and Tight Supply: Effects of Scarcity*  
*Conversations: The Consequences of Dishonest & Unethical Business Practices*

**AWARDS AND BUSINESS LUNCHEON**

**12:30pm-2:00pm**

**Ballroom**

**SESSION 7**

**2:15pm - 3:30pm**

*Symposium: Using Neuroimaging to Predict Population-level Consumer Behavior*

*Symposium: New Answers to an Old Question: Emerging Research on the Determinants of Elaboration*

*Symposium: Underexplored Levers of Healthy Eating: Dissociative, Perceptual and Sensory Influences on Food Consumption*

*Individual Papers: Spread the Word: Discussion and Word of Mouth Effects*

*Individual Papers: Insights about Decision Conflict*

*Special Awards Session: SCP Fellow, Early Career Award and Dissertation Competition Winners*

**BREAK**

**3:30pm-3:45pm**

**SESSION 8**

**3:45pm - 5:00pm**

*Symposium: Extending the Classic and Embracing the New: Frontier of Consumer Lay Theory Research*

*Symposium: New Perspectives on Choice Overload*

*Individual Papers: Consumer Responses to Virtual Reality and Gamification*

*Individual Papers: The Effects of Message Cues and Frames on Persuasion*

*Individual Papers: With a Goal in Mind: Goal Pursuit and Satiation*

*Individual Papers: Perspectives: How Different Mindsets Influence Decisions*

**OFF-SITE EVENT: The Great GatSCPpy Celebration at the Wrigley Mansion**

**5:30pm-11:30pm**

# Thursday, 26 February 2015

## REGISTRATION

11:00am-8:00pm

## SCP Executive Committee Meeting

3:00pm - 5:30pm

## RECEPTION

6:00pm - 8:00pm

Ballroom

## WORKING PAPER SESSION 1

6:00pm - 7:30pm

Ballroom

### ***Working Papers: Working Paper Session One***

#### ***The Hazard of Well-known Brands: Discerning Consumer Authenticity by Inferring Motivation***

Katherine Crain, Fuqua School of Business, Duke University\*

James Bettman, Fuqua School of Business, Duke University

Mary Frances Luce, Fuqua School of Business, Duke University

How do observers discern the authenticity of a consumer? We define perceived authenticity as occurring when a consumer is perceived to be engaging in identity signaling consumption that is in accordance with his or her true self. We demonstrate that consumers choosing brands that are well-known for being associated with an identity are actually perceived as less authentic in relation to that identity than consumers choosing brands that are lesser-known; however, this effect is attenuated by consistent product use. Finally, we show that judgments of authenticity are mediated by perceptions of the consumer's motivation.

For more information contact: [katherine.crain@duke.edu](mailto:katherine.crain@duke.edu)

#### ***Examining Effects of Anticipated Future Income Changes on Present Consumption***

Anja Schanbacher, London Business School, UK\*

David Faro, London Business School, UK

Simona Botti, London Business School, UK

Do anticipated future changes in income influence present consumption? According to economic literature, expectations of income increases should increase consumption and expectations of income decreases should decrease it. However, empirical evidence of such consumption smoothing is inconsistent. We examine consumption smoothing from a psychological perspective, focusing on mental

representations of future income changes and the role of self-continuity. Examining consumption of nonessential luxuries, we found evidence of smoothing in anticipation of income decreases but not increases. However, encouragement to imagine the future vividly or priming of continuity caused people to borrow from their wealthier future selves and increase present consumption.

For more information contact: [aschanbacher.phd2012@london.edu](mailto:aschanbacher.phd2012@london.edu)

***“Therapeutic Advertising”: When Do Female Consumers Really Benefit?***

Daniela Herzog, PhD student, University of Bern, Switzerland\*

Lucia Malär, University of Bern, Switzerland

Harley Krohmer, University of Bern, Switzerland

This research examines whether female consumers benefit from brand strategies that attempt to decrease their self-discrepancies by setting more realistic ideals (i.e., therapeutic advertising, such as Body Shop, Aerie, and Dove). The results of our empirical study reveal that therapeutic advertising leads to stronger self-conscious emotions (both pride and shame) than idealistic advertising. More specifically, we can show that the emotion of pride was increased (= benefit) among all female participants, while the emotion of shame was only increased (= no benefit or even negative benefit) among participants with low self-liking and high difficulties in abandoning unattainable goals.

For more information contact: [malaer@imu.unibe.ch](mailto:malaer@imu.unibe.ch)

***Clothe Your Minds with Unique Fashion That Feels Right to You***

San Young Hwang, Hongik University\*

Nara Youn, Hongik University\*

Through three studies, we show that wearing unique clothing can alter an individual’s creativity. This relationship between uniqueness of fashion and creativity is moderated by extroversion. We also unveil the mediating role of self-awareness which explains the effect of uniqueness of fashion on wearer's creativity.

For more information contact: [nara@hongik.ac.kr](mailto:nara@hongik.ac.kr)

***Go Green or Go God? Examining the Relationship between Religiosity and Pro-Environmental Behaviors in the United States:***

***The Underlying Rationale of Locus of Control***

Frank Cabano, University of Kansas, USA\*

Ahreum Maeng, University of Kansas, USA

Sanjay Mishra, University of Kansas, USA

The current research examines the impact of religiosity on pro-environmental behaviors in the United States, while focusing on

Judeo-Christians and nonreligious individuals specifically. It is the first to empirically test for the underlying psychological mechanism that explains this relationship. Using both macro-level data and survey methods, we find that Judeo-Christians are significantly less willing to engage in pro-environmental behaviors than the nonreligious. We also find that an extrinsic religious orientation, or weak commitment to one's religion, mitigates the negative effect of Judeo-Christian religious beliefs on pro-environmental behaviors. The research provides evidence for Judeo-Christians having more of an external locus of control (ELOC) than nonreligious individuals, due to their belief in an omnipotent and controlling God. This ELOC via the image of an all-controlling God is the underlying rationale that explains why they are not as willing to engage in pro-environmental behaviors as the nonreligious.

For more information contact: [frankcabano@ku.edu](mailto:frankcabano@ku.edu)

### ***Role of Calorie Labeling and Social Influence on Amount of Food Purchased***

Melis Ceylan, Koc University, Turkey\*

Vicki Morwitz, New York University, USA

Nilufer Aydinoglu, Koc University, Turkey

We investigate the effect of calorie labeling and social influence at the point of food purchase on consumers' intended amount of food consumption. We propose and demonstrate that calorie labeling will affect the total amount of food orders differentially based on whether or not the situation entails social interaction or observation by others. We further show that this joint effect occurs through motivations of impression management, and that the process is mediated by anticipated embarrassment. As a result, consumers may tend to reduce their calorie intake to avoid the potential for embarrassment in social food purchase situations.

For more information contact: [mceylan13@ku.edu.tr](mailto:mceylan13@ku.edu.tr)

### ***How Social Norms Can Help You Purchase Healthier: The Case of Two Marketing Nutrition Interventions across Multiple Grocery Stores***

Mihai Niculescu, New Mexico State University, USA\*

Collin Payne, New Mexico State University, USA

David Just, Cornell University, USA

This research analyzes over 1.15 million individual grocery store transactions in four stores to assess the efficacy of two marketing nutrition interventions to increase fruit and vegetable purchases without decreasing store profitability or increasing shopper budgets. Descriptive social norm messages attached to shopping carts over four-week periods in two grocery stores increased fruit and vegetable purchases by 12.4% and 7.4%, respectively (compared to baseline). Prescriptive social norm messages displayed on floor mats placed around the perimeter of two additional grocery stores increased fruit and vegetable purchases by 17.3% and 4.9%, respectively. Finally, total sales (per transaction) did not change during intervention (compared to baseline).

For more information contact: [niculem@nmsu.edu](mailto:niculem@nmsu.edu)

### ***Achievement Mindsets and Brand Dilution***

Efe Camurdan, Koc University, Turkey\*

Zeynep Gurhan Canli, Koc University, Turkey

Alokparna (Sonia) Monga, Rutgers University, USA

Research has shown that in the face of negative information about brands, strong self-brand connections play a pivotal role in preventing the dilution of the favorable attitudes that consumers hold toward the brands. In this paper, we show that not all consumers who have strong self-brand connections act defensively against negative brand information. According to achievement goal framework, there are two types of achievement goals: mastery and performance. We show that consumers who hold mastery mindset tend to be more susceptible to brand dilution than consumers who hold performance mindset especially if they feel a personal connection towards the brand.

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### ***More for Me within P2P: The Impact of a Sharing Mindset on Consumption Estimates***

Christopher A. Summers, The Ohio State University\*

Hyojin Lee, The Ohio State University\*

The emergence of the peer-to-peer (P2P) market has given consumers a choice between exclusive and temporary product usage. Anticipated use (e.g., duration or quantity) is therefore an important decision criterion. How might consumption forecasts be biased by thinking about sharing (vs. not)? Across three studies, this research demonstrates that a sharing intention induces a threat to freedom (i.e., reactance) that leads to inflated estimates of expected usage for the self (but not others).

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### ***Bull Fighter or Spin Doctor? When Cues of Brand Liking Lose Their Truth Value***

Lora Harding, Belmont University, USA\*

This paper shows that cues of brand liking are not always accepted at face value, but are instead scrutinized for their diagnosticity when consumers have reason to doubt their truth value. Such doubts may arise either because consumers question the brand's motives (experiment 1) or because the valence of the cues does not correspond with their self-views (experiment 2), leading consumers to disregard those cues that they suspect may be strategically managed or "spun" to convey a desired impression (i.e., friendly brand actions). In contrast, self-brand similarity cues reliably exert a positive influence on brand attraction, presumably because consumers believe these cues are less likely to be strategically managed and, thus, are more diagnostic of the brand's true liking.

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***The Impact of Source and Overhearing of a Compliment on Consumers***

Donya Shabgard, University of Manitoba, Canada\*

Kelley Main, University of Manitoba, Canada

Kate Loveland, Xavier University, USA

Persuasion knowledge helps explain how consumers have formed theories regarding the motives of sales agents. We examine how consumers react to subtle as compared to direct flattery from a sales clerk or a fellow customer. Results indicate that both males and females respond negatively to the sales clerk, however the subtlety had a more positive influence on males when receiving an overheard compliment from the customer in comparison to the sales clerk.

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***Self-Expansion in Consumer-Brand Relationships***

Maria Rodas, University of Minnesota, USA\*

Carlos Torelli, University of Minnesota, USA

A growing body of consumer research has recently focused on the construct of brand love, especially on conceptualizing this relatively new construct and on its consequences on consumers' behavior in relation to the brand in question. However, there is little research that has focused on the underlying process of how these close consumer-brand relationships form. This research addresses this gap in the literature by experimentally investigating self-expansion as a potential mediator of brand love. Our preliminary findings demonstrate that self-expanding experiences with a brand result in higher levels of love for the brand in question, even with fictitious brands.

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***Evoked Auditory Imagery Enhancing Consumer Preferences***

Ruby Saine, University of South Florida, USF\*

Philip Trocchia, University of South Florida, USF

We provide converging evidence to support a conceptual model in which evoked auditory imagery has a positive effect on consumer preferences.

For more information contact: [Ruby.Saine@yahoo.com](mailto:Ruby.Saine@yahoo.com)

***Sharing Good Fortune: Post-Consumption Effects of Scarcity on Pro-Social Behavior***

Therese Louie, San Jose State University, USA\*

Rick James Rieta, San Jose State University, USA

Anecdotal and research evidence reveals that consumers more highly value items that are scarce. This research looks at scarcity's post-consumption effects. Based upon studies linking positive affect to helping behavior, it was hypothesized that receiving something scarce would prompt fortunate consumers to engage in more pro-social behavior. Participants received candy that was either plentiful or scarce; they then were invited to keep supplies for their own use or to donate them back for others' benefit. As hypothesized, the donation rate was higher when the same candy was received in scarce, versus non-scarce, conditions. Discussion focuses on applications and future research.

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***Is it a Louis Vuitton Bag or is it a Bag by Louis Vuitton? The Role of Salient Goals in the Categorization of Luxury Products***

Perrine Desmichel, University of Lausanne, Switzerland\*

Joseph Lajos, University of Lausanne, Switzerland

Bruno Kocher, University of Lausanne, Switzerland

Luxury brand managers strive to craft and communicate effective brand images. This expenditure of effort raises questions about the circumstances in which consumers are most likely to retrieve brand knowledge while shopping. Our work addresses these questions by exploring the ways in which consumers categorize luxury products and identifying circumstances in which they are most prone to focus on brands. We find that consumers with active self-indulgence goals focus more on brands and less on product types than consumers with active status goals or no particular activated goal.

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***"I Feel Your Pain" The Efficacy of Instantiating States in Charitable Appeals***

David Carlin, PNC\*

Carey Morewedge, Boston University, USA

Charities have long understood that creating empathy for their beneficiaries is an effective way to raise donations. We propose that fostering empathy by increasing the donor's understanding of the beneficiary's psychological state (i.e., their challenges or sufferings) can be more effective than other empathy-increasing appeals. We found even negative events (unpleasant for the donor) garnered more participation/donations than more positive appeals when they increased the ability of the donor to "feel the pain" of the beneficiary. Their efficacy did not require increased perceived similarity to the beneficiary, and was not driven by pure semantic association between the appeal and state.

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### ***Construction and Validation of Universal Consumer Motivation Scale (CMS)***

Magdalena Poraj-Weder, University of Warsaw, Psychology Department, Poland\*

Katarzyna Sekscinska, University of Warsaw, Psychology Department, Poland

Dominika Maison, University of Warsaw, Psychology Department, Poland

Based on four survey studies we constructed a 26-item Consumer Motives Scale (CMS) and Consumer Motivation Model. The scale fits to all psychometric standards (validity, reliability). The Consumer Motivation Model consists of 5 major consumer motivations: power/recognition; control, belonging, reward, quality. Our last study (nation-wide representative sample, n=1000) showed also significant differences in many types of consumer preferences, behaviors, product choices, and brand preferences depending on the dominating consumers' motives structure. For example people with higher power/recognition prefer BMW and iPhone brands, but people with higher belonging motivation prefer Volvo and Nokia brands.

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### ***Innumeracy and the Temporal Frame of Pro-Social Messages on Donation Likelihood***

Alexander Davidson, Concordia University, Canada\*

Michel Laroche, Concordia University, Canada

Pro-social messages in marketing frequently contain information expressed numerically. This presents a problem for people with low numeracy skills who have trouble interpreting numerical concepts. Less numerate people are shown to also discount the future for present gains. A study is conducted which investigates the role of temporal frames in pro-social messages and their impact on donation likelihood for innumerate people. When exposed to a pro-social message asking for money to help eliminate starvation, innumerate people increase donation likelihood when a present (future) temporal frame is combined with a numerical depiction of victims in a small (large) reference group.

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### ***Risk Taking As Power Signalling***

Mehdi Mourali, University of Calgary, Canada\*

Zhiyong Yang, University of Texas, Arlington

Frank Pons, Euromed Management

Consumers tend to make riskier choices when they feel more powerful. While prior research often attributes this result to increased optimism in the perception of risk, the present study tests an alternative mechanism. Results from two experiments suggest that powerful individuals often make risky choices to signal their power to others.

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***Does Decision-Making Speed Depend on Non-Interactive Others?***

Atsuko Inoue, Seikei University, Japan\*

Atsunori Ariga, Rissho University, Japan\*

Is consumers' decision-making speed influenced by non-interactive others? Participants consecutively observed pairs of images and made decisions regarding which they preferred. Each participant performed the task individually while a confederate performed the same task beside the participant. The speed at which the confederate performed the task was manipulated. Participants made decisions quickly when the confederate performed the task quickly, but this effect was not elicited by the slow confederate. Interestingly, participants' satisfaction ratings for their own decisions were intact even if their decisions were hastened by others, suggesting that decision-making speed is socially influenced, independent of post-decision evaluation.

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***When Brands Come Alive in Social Media: Unleashing the Effect of Self-Disclosure on Consumer-Brand Relationship***

Li Huang, University of South Carolina, USA\*

Wenyu Dou, City University of Hong Kong

This research investigates the brand's personal disclosure on Twitter and its consequences on consumer-brand relationship. We provide a new framework predicting what to disclose, how to disclose, and to whom the brand should disclose. Shifting the psychological closeness, self-disclosure on Twitter can either help or impair the relationships.

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***Culture and The Self: the Effects of Self-Construal on Attractiveness of Products Imported from Other Countries***

Mingyue Zhang, Rutgers University, USA\*

Christine Ringler, Rutgers University, USA

Country image is an important cue that affects consumer product evaluations, while cultural orientation impacts the chronic self-construal of individuals living in that society. This study investigates how situational self-construal influences consumer quality judgments of imported products from countries with varying economic development and levels of collectivism versus individualism.

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***Consumer Benevolence and Risk Taking***

Sudipta Mukherjee, Scheller College of Business, Georgia Tech, USA\*

Sam Bond, Scheller College of Business, Georgia Tech, USA\*

Our research examines the relationship between benevolent consumer behavior and subsequent risk taking. We propose that acting benevolently provides a form of licensing, which in turn decreases perceptions of risk. We conducted two studies, in which participants described in detail a benevolent or non-benevolent (control) behavior and then responded to three distinct risk trade off scenarios. Results indicated that across all three scenarios, risk perceptions were lower for participants in the benevolence conditions. In addition, these participants spent less time deliberating and showed lower cognitive reflection, suggesting that the primary effect may be driven in part by decrements to systematic processing.

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### ***Nostalgia Strengthens Social Media Engagement***

Young K. Kim, University of Iowa, USA\*

Jing (Alice) Wang, University of Iowa, USA

Catherine Cole, University of Iowa, USA

This research investigates the effects of using a nostalgic ad in social media. We examine when consumers tend to engage with the ad by liking it, sharing it or commenting on the ad. In study 1, we find that when there is a match between consumers' nostalgic mindset and the nostalgic feelings evoked by an online ad, consumers tend to engage with the ad. In study 2, we study how social connectedness mediates the effect of mindset on engagement. We further investigate the underlying mechanisms by examining whether self-monitoring affects the matching effect and the mediating effect of social connectedness.

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### ***How Ya Like Me Now? How Spacing and Valence Influence Brand Evaluations***

Hayden Noel, University of Illinois at Urbana-Champaign, USA

Robert Arias, University of Illinois at Urbana-Champaign, USA\*

While previous literature has examined the spacing effects on memory, little research has investigated its effects on affect. This paper illuminates how the spacing of stimuli influences emotional reactions. The findings indicate that people prefer to receive negative stimuli in massed presentation forms and positive stimuli in spaced formats. Extant literature suggests that two theories may help explain this phenomenon one involving processing fluency and the other affective habituation. These findings may enhance practitioners' understanding of the influence of adjacent advertisements. This research may potentially uncover a connection between spacing and affect, a connection not yet established in extant literature.

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### ***The Peculiarly Persistent Pleasantness of Bizarre Experiences***

Robert Latimer, University of Toronto, Canada\*

Six studies examine retrospective enjoyment of mundane and bizarre experiences. Mundane experiences were less enjoyable in retrospect than they were initially, while bizarre experiences remained equally enjoyable or improved in retrospect. The pattern held when bizarre and mundane experiences were initially equally enjoyable and when bizarre experiences were initially less enjoyable than the mundane experience. Our results suggest that firms and party planners alike should make consumers' lives a bit more peculiar.

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### ***Investigating Conversational Voice and Language of Responses to Online Reviews***

Heike Kniesel, Alpen-Adria-Universitaet Klagenfurt, Austria

Martin K.J. Waiguny, Auckland University of Technology, New Zealand\*

Sonja Grabner-Kräuter, Alpen-Adria-Universitaet Klagenfurt, Austria

Sandra Diehl, Alpen-Adria-Universitaet Klagenfurt, Austria

We report about two studies, which investigate the effect of conversational human voice in hotel's responses to online reviews. Surprisingly contradictory to expectations the initial study has found an opposite effect than theory would suggest: Corporate voice was evaluated more positively compared to human voice. We assume that this is a result of the language, as the study was not conducted in an English speaking country. The follow up study therefore investigates bilinguals answering the same response to an online review in German and English. The German response got less positively evaluated compared to the English version. Further studies are proposed to investigate these effects.

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### ***The Impact of Anticipated Retrieval Modality on the Encoding of Brand Names***

Dan Rubin, Baruch College, USA (PhD Student)\*

David Luna, Baruch College, USA

Previous research has demonstrated that anticipation of future events can influence memory for yet to be learned information. Through an experimental study, we explore whether anticipation of the future modality of retrieval, be it orally (e.g., by telephone, face-to-face) or via text (e.g., text messaging, email), impacts the way in which identically presented information is encoded.

We demonstrate that manipulating subjects' anticipated mode of recall affects the number of correct responses on a recognition task. Subjects expecting to communicate a set of remembered brand names via text messaging outperformed those expecting to verbally communicate the brand names via telephone.

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***Friend or Foe, Master or Apprentice? The Influence of Fear of Failure on Brand Evaluations***

Lale Okyay Ata, Koç University, Turkey\*

Zeynep Gurhan-Canli, Koç University, Turkey

Vanitha Swaminathan, University of Pittsburgh, USA

Through an investigation of fear of failure, a self-threat with both personal and social dimensions, we build on two streams of research which suggest that (1) consumers' efforts to reassert a threatened identity have implications for brand related decisions and (2) consumers perceive brands in ways that are similar to how they perceive people. We suggest that whether the personal identity threat versus the social identity threat component of fear of failure is salient will have differential consequences for a consumer's preference for a brand based the brand's perceived intentions (warmth) versus ability (competence). Social projection mediates the effect.

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***C-Sections are the Easy Way Out: How the Protestant Work Ethic Affects Preferences for Natural Healthcare***

Yimin Cheng, Hong Kong University of Science and Technology\*

Anirban Mukhopadhyay, Hong Kong University of Science and Technology

Innovation has substantially changed our world. For example, over 85% of corn, soybeans and cotton produced in the U.S. are genetically modified, and the prevalence of Cesarean section deliveries increased by 60% from 1996 to 2009. However, do consumers like it? Using both publicly available country-level data and individual-level experimental data, we find that consumers differ in their preference between natural vs. artificial methods of production as a function of Protestant Work Ethic (PWE, Weber 1905). Higher PWE leads to lower preference for new methods of production, when these are perceived as more artificial than traditional methods.

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***Culture and Psychological Distance on Facebook: Implications for Advertising Persuasion***

Yoon Hi Sung, University of Texas at Austin, USA

So Young Lee, University of Texas at Austin, USA\*

Dong Won Choi, University of Georgia, USA

Dong Hoo Kim, University of North Carolina, USA

The study examines how psychological distance on SNSs has an impact on the effectiveness of advertising messages by cultures. Based on construal level theory and cultural research, a 2 (Culture: Individualism vs. Collectivism) × 2 (Psychological distance: distant vs. proximal) × 2 (Message types: desirability vs. feasibility) factorial design are employed. Theoretical and empirical implications are discussed.

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***The Effect of Privacy Concerns on Consumers' Preference for Flexibility***

Jiyoung Lee, University of Texas at Austin, USA\*

Andrew Gershoff, University of Texas at Austin, USA

The current paper explores the effect of privacy concerns on consumers' preference for flexibility. We propose that heightened privacy concerns lead consumers to seek flexible products or services, in an attempt to maintain or re-establish their lowered perceived control. We demonstrate that when people's privacy concerns are heightened (vs. baseline), they are more likely to prefer flexible options which allow them to have control over their current or future decisions, despite the trade-offs associated with such flexibility. We also show that such effect is eliminated when they have an opportunity to affirm their sense of control in a different domain.

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***Back to Order: How to Preserve Future Brand Purchase Intentions When Things Go Wrong?***

Jamel Khenfer, Aix-Marseille University, France\*

A passenger who misses an appointment because of unexpected delays on train services. An online shopper unable to wear the outfit s/he ordered for a long-awaited date because it doesn't fit. Anecdotal observations of consumers unable to carry their goals because of uncontrollable events raise the question of their persistence to purchase the brand involved in such goal failures. This research emphasizes the moderating role of beliefs that the world is an ordered and non-random place on future brand purchase intentions in the face of goal failure.

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***Cross-cultural Perspective on Materialism: Uniqueness vs. Conformity***

Wonkyong Beth Lee, DAN Management and Organizational Studies, Western University, Canada\*

W. Q. Elaine Perunovic, Department of Psychology, University of New Brunswick, Canada

Jordan Shriver, Department of Psychology, University of New Brunswick, Canada

We explore cross-cultural differences of materialism and consumers' well-being. Due to the ubiquity of luxury brands in Asian countries, Asian consumers may try to fit in or to conform to group norms through the possession of material objects. As conformity has positive connotations of connectedness and harmony in East Asian cultures (Kim & Markus, 1999), in turn, the possession of materialistic objects may be linked to a higher sense of well-being among Asian consumers compared to their North American consumers.

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***Why and How Brand Loyalty and Product Choice Differs Globally***

Mirei Takashima, University of California Los Angeles, USA (PhD student)\*

Sanjay Sood, University of California Los Angeles, USA

Past research shows that Asians vs. Americans are more conformist and less likely to express their uniqueness; they are also known to be brand-obsessed. We examine brand loyalty and expressions of uniqueness through consumption across the U.S. and Asia, and investigate the underlying drivers for brand equity. We find that Asian vs. American consumers are less brand loyal because they focus more on product innovation and functionality. Further, because they have higher expectations for products and brands, the brand has to work harder to stay relevant. We also find that contrary to conventional wisdom, Asian consumers express uniqueness through consumption.

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***Seeing is Believing: The Effect of Picture in Online Review to Reduce Perceived Risk toward Online Store***

Sun Young Ahn, University of Arizona, USA\*

JungHwa(Jenny) Hong, State University of New York at Binghamton\*

We propose that the negative relationship between perceived risk and online purchase intention is moderated by the presence of pictures in consumer's online review. Using an experimental design, we find that negative effect of high level of perceived risk toward online store is mitigated via presence of visual cues in positive online reviews.

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***Re-examining Perceived Thematic Congruence/Incongruence Issues: First Insights From two Qualitative Studies***

Claas Christian Germelmann, University of Bayreuth, Germany\*

Jean-Luc Herrmann, IUT de Metz, University of Lorraine, France

Mathieu Kacha, IUT de Metz, University of Lorraine, France

Peter R. Darke, Schulich School of Business, York University, Canada\*

We investigate the congruence between an advertisement's product category and thematic media content. Extant studies often involve explicit ratings asking whether two (or more) entities are perceived as relevant / expected together. Such direct measures may artificially induce systematic processing. To avoid this bias, qualitative studies and a follow-up experiment were conducted. Without cueing, participants did not spontaneously evoke any combination of ad and media context. Furthermore, respondents seemed to consciously focus on incongruence more than congruence. We suggest congruence effects are likely to require other situational conditions that somehow direct attention/processing to this aspect of the ad.

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### ***Mechanism of the Negative Effect of Brand Rejection: Ego Threat and Defense Mechanism***

Wendy Yan, University of Manitoba, Canada\*

Fang Wan, University of Manitoba, Canada\*

Amitava Chattopadhyay, INSEAD, Singapore

This paper explores the interaction effect of brand type and rejection on brand evaluation. We found that the negative effect of brand rejection on brand evaluation is driven by consumers' defense mechanism triggered by rejection. We also found that symbolic vs. functional brands have differential effects on consumers' self esteem.

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### ***A Method for Selecting Field Experiment Locations***

David Trafimow, New Mexico State University, USA

James Leonhardt, New Mexico State University, USA\*

Mihai Niculescu, New Mexico State University, USA

Collin Payne, New Mexico State University, USA

When marketing researchers perform field experiments, it is crucial that the experimental location and the control location are comparable. At present, it is difficult to assess the comparability of field locations because there is no way to distinguish differences between locations that are due to random versus systematic factors. To accomplish this, we propose a methodology that enables researchers to evaluate and select optimal field locations by parsing these random versus systematic effects. To illustrate this methodology we provide a step-by-step example involving consumer household electrical consumption.

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### ***Framing Effects in Individuals' Allocation Behavior***

Sunaina Shrivastava, University of Iowa, USA\*

Gaurav Jain, University of Iowa, USA

Gary Gaeth, University of Iowa, USA

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Irwin Levin, University of Iowa, USA

This paper investigates the effects of contextual and attribute framing on individuals' allocation behavior. We show that the decider allocates a lesser amount to the other player if the initial sum of money is endowed to the decider rather than to the other player. In the first known application of framing using this paradigm, we show that individuals allocate more money to others when attribution framing shifts the focus from themselves to another individual than when attribution framing makes the focus on themselves more salient. The effects of attribution framing become insignificant when this asymmetry in self-other salience is reduced.

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# Friday, 27 February 2015

**Zumba Class**  
**7:00am - 8:00am**  
**Clara Vista Room**

**REGISTRATION**  
**7:00am - 8:00pm**

**BREAKFAST**  
**7:30am-8:15am**

**SESSION 1**  
**8:15am - 9:30am**

## ***Symposium: Not Always Negative: The Antecedents and Consequences of Low Personal Control***

**Chair:** Noah VanBergen, University of Miami, USA  
Chiraag Mittal, University of Minnesota

### ***Serendipity: The Sweet Side Effects of No Choice***

Aekyoung Kim, University of Texas at San Antonio, USA\*  
Kristina Durante, University of Texas at San Antonio, USA  
Michael Norton, Harvard Business School, USA

A large body of research demonstrates a link between control over choice and increased intrinsic motivation, perceived control, task performance, and life satisfaction (Bown, Read, and Summers 2003; Ryan and Deci 2000). But, is choice always better? One consequence of active choice is that people perceive increased responsibility for the outcome of a chosen option (deCharms 1968). Subsequently, research has shown that choice can lead to negative outcomes such as decision paralysis (Iyengar and Lepper 2000), regret (Brenner, Rottenstreich, and Sood 1999; Simonson 1992), and choice deferral (Dhar 1997). These negative effects are exacerbated when consumers do not have a strong, pre-existing preference (Chernev 2003). However, little is known about the effect of removing choice altogether on product enjoyment.

We propose that consumers experience increased product enjoyment and slower product satiation when their ability to exercise control over choice is absent. If people perceive an event to be the result of factors beyond their control – to be the result of serendipity – perceived responsibility for the outcome is likely lower and, in some situations, the meaningfulness of a product or experience increases (e.g., Kray et al. 2010; Morewedge, Glibin, and Norton forthcoming). Serendipity should therefore increase enjoyment and decrease satiation because, compared to choice conditions, serendipitous events that involve the absence of personal control are less likely to lead people to scrutinize (and second-guess) their outcomes.

Study 1a-c examined product enjoyment and satiation when choice was absent versus when choice was activated. All participants were told that they would view a piece of art (1a), watch a video (1b), or listen to a music clip (1c). However, half of the participants were asked to choose between two options (i.e., A or B) and the other half was not given a choice. In Study 1a, participants in the no-choice (vs. choice) condition enjoyed the same painting more and wanted to view the painting again ( $p < .05$ ). Study 1b used a video. In this study, participants were also asked to report their desire to download a video and willingness to pay for a DVD of the video. Participants in the no-choice (vs. choice) condition enjoyed the same video more, had increased desire to view the video again, download it, and were willing to pay more for the DVD ( $p < .055$ ). Because one way that consumers alleviate satiation is to seek variety (Menon and Kahn 1995), Study 1c also examined whether the no-choice condition would lead people to seek less variety in the same product category (music), vs. another product category (movies). Participants in the no-choice (vs. choice) condition reported increased enjoyment of the music and desire to hear the music again, although these effects did not reach significance ( $p < .19$ ). However, participants in the no-choice (vs. choice) condition again had increased desire to download the music and increased willingness to pay for the music ( $p < .05$ ). Moreover, participants in the no-choice (vs. choice) condition sought significantly less variety in music than movies (a discordant category;  $p < .004$ ).

Study 2 involved the consumption of a utilitarian product—a pen—rather than a hedonic product. Participants were seated at a desk in front of two small gift bags. In the choice condition, participants were instructed to choose one of two bags and open it. In the no-choice condition, participants were instructed which gift bag to open. The pattern of findings was identical to those of previous experiments. Participants in the no-choice (vs. choice) condition enjoyed the same pen more, continued using the pen for a longer period of time, reported a higher likelihood of buying the pen, and were willing to pay more for the pen ( $p < .088$ ).

Study 3 increased the choice set and added time pressure to the act of choice. Because the negative effects of choice have been shown to increase as assortment size increases, we predicted that the no-choice vs. choice effect would strengthen as the assortment size increased, particularly when choice occurred under time pressure. Participants viewed a video clip in one of four choice conditions: no choice, choice with 2 options, choice with 12 options, and choice with 12 options and 2 s to choose. As expected, enjoyment ratings, desire to listen to the same music again, intention to download the music and willingness to pay gradually decreased as assortment size and time pressure increased ( $p < .05$ ).

Study 4 tested whether increased enjoyment and slower satiation occur in the no-choice condition because the experience is perceived as serendipitous. In Study 4, participants viewed a video clip in either the choice or no-choice condition and reported how much they enjoyed the clip. In addition, participants responded to four items designed to measure the perceived serendipity of the product experience. Participants reported how much they agreed with the following statements: (1) This video seemed to have been selected just for me; (2) This video was a pleasant surprise; (3) This video was just what I needed to watch right now; and (4) I was lucky to have watched this video ( $\alpha = .89$ ). Compared to the choice condition, the no-choice condition increased enjoyment and perceived serendipity ( $p < .08$ ). Mediation analysis showed that serendipity statistically mediated the relationship between choice condition and enjoyment (CI: [-9.80, -.26] does not contain zero). People enjoyed the video more when they did not have control over their choice because they perceived that the event of watching the video was serendipitous in nature.

Although consumers desire control over choice, the act of choosing does not always lead to positive outcomes: across six studies, consumer enjoyment increased and satiation decreased when consumers could not exercise control over choice. Serendipity also influenced consumers' desire to purchase, willingness to pay, and desire for variety. Finally, although control over external factors has been shown to be positively correlated with well-being (Zuckerman et al. 1978), our results suggest that well-being can be enhanced when consumers perceive that the absence of control signals the presence of serendipity.

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## ***Boundaries of the Heart: The Interplay of Personal Control and Emotion on Donation Decisions***

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Gavan Fitzsimons, Duke University, USA

James Bettman, Duke University, USA

How do consumers respond when their sense of personal control over outcomes in life is threatened? More specifically, how does it change what they are willing to give to others? Building on prior research suggesting that low feelings of control lead individuals to seek greater structure in their lives, or the sense that ‘there’s a place for everything and everything is in its place’ (e.g., Kay et al. 2008, Cutright 2012), we expect that individuals will find it particularly important to keep their emotions ‘in place’ when control is low. In other words, they should be more likely to confine the traditional carry-over effects of emotions (e.g., Lerner et al. 2004) to specific, relevant areas. We expect this to be particularly important in the area of charitable giving, where emotions are often considered to be critical in determining outcomes (e.g., Small & Verrochi 2009). Specifically, we predict that when control is low, people will use their salient emotions to increase (or decrease) donations only for organizations that are highly relevant to the source of their emotions. For example, if individuals are sad after thinking about abandoned pets, those with low feelings of control should be the most likely to use this sad feeling—and the empathy and desire for connection that often stems from sadness (Mouilso et al. 2007; Small & Lerner 2008)—to concentrate their donations on pets. Conversely, high control individuals will be more likely to use their sad feelings to spread donations across a broad range of charities.

In our first study designed to test this idea, participants were randomly assigned to recall and write about a (positive) time of low or high personal control (Kay et al. 2008). They were then asked to watch a sad movie clip. Specifically, participants were induced to feel sad about either the death of a loyal dog (*I am Legend*) or because of the emotional pain of a young child (*The Champ*). Participants were then asked to allocate \$200 to a series of charities related to dogs, children or unrelated topics. Results revealed that the amount of money that people donated to their “relevant” charity (i.e., the charity that most closely resembled the topic of the sad video that they saw—dogs or children) was greater than the amount donated to their “irrelevant” charity when control was low ( $p < .02$ ), but not when control was high ( $p = .72$ ). Further, the amount of money that people donated to their “relevant” charities was greater in low control than high control ( $p = .05$ ).

In a second study, we sought to demonstrate that our hypotheses extend beyond sadness. We therefore aimed to conceptually replicate our results with an emotion that should lead to very different reactions than sadness. Specifically, we hypothesized that when consumers experience feelings of disgust and consequently have little desire to donate (given that they are motivated to move away from and expel things and ideas in their environment; Lerner et al. 2004), those with low control should reduce their donations only within relevant areas. To test this idea, participants were assigned to a low or high control condition as in Study 1. They were then asked to watch a very disgusting video, which either showed a dog eating feces or a child doing the same. Participants were then asked to allocate \$200 to child or dog-related charities. As expected, the amount of money that people donated to their “relevant” charity was marginally less than the amount donated to their “irrelevant” charity when control was low ( $p = .11$ ), and marginally higher when control was high ( $p = .11$ ). The average amount that people donated to their “relevant” charities was lower when control was low than when control was high ( $p = .01$ ). Thus, individuals in the low control condition were more likely to use the action-tendencies associated with disgust (the need to expel and move away) and apply it to the charity that was most relevant to the source of their disgust.

In a third study, we wanted to assess real donation behavior and incorporate a neutral emotion comparison. In doing so, participants were assigned to watch a video that simultaneously manipulated control and emotion with a message about pets in need. Participants saw a message that suggested that people have high or low control over outcomes in their lives as well as dog and cat images that

evoked either sadness or neutral feelings. Thus, the study had a 2(control: low vs. high) x 2(emotion: sad vs. neutral) between-subjects design. Participants were then asked to donate their own money to any or all of 3 charities: Society for the Prevention of Animal Cruelty (SPCA), American Red Cross, and Big Brothers/Big Sisters. The SPCA was the charity most relevant to the emotion manipulation and was thus expected to be the focus of individuals' donations when control was low, but not high. As expected, there was first a main effect of sadness on total donations ( $p = .02$ ), such that people donated more when in a sad state than a neutral state. Importantly, there was also a significant 2-way interaction of control and emotion (sad vs. neutral) on allocations to the SPCA ( $p = .04$ ). Probing this interaction, we find that people gave more money to their "relevant" charity (i.e., SPCA) in low control than high control (\$1.35 vs. \$0.82,  $p = .05$ ). (This was not true within the neutral emotion condition,  $p > .38$ ). Additionally, when control was low and participants were sad, the amount of money that people donated to their "relevant" charity (SPCA) was higher than the amount donated to the "irrelevant" charities ( $p = .03$ ). This was not true when control was high ( $p = .92$ ).

Together, these studies suggest that when control is low, individuals erect mental boundaries that dictate which charities are relevant to their current emotions and which ones are not. This allows them to allocate their money in a way that feels ordered and structured, and reject the notion that outcomes are randomly or chaotically determined, which is particularly comforting when feelings of control are low.

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### ***Loss of Control and Self-Regulation***

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Juliano Laran, University of Miami, USA

While research has shown that consumers usually perceive high levels of personal control (Kay et al., 2008; Cutright 2012), individuals also experience fluctuations in the level of control they have at any given time. These threats to personal control may be significant (e.g., economic downturns) or fleeting (e.g., stockouts). Nevertheless, experiencing a loss of control has been shown to lead to a diverse array of effects, from supporting controlling governments and religions (Kay et al. 2008) to rejecting ill-fitting brand extensions (Cutright, Bettman, and Fitzsimons 2013).

In this project, we examine a potential driver of the effects personal control has been shown to have on consumer behavior by tracing personal control back to childhood socialization. Drawing from research showing that personal control is one of the most important aspects of childhood socialization (Nucci and Weber 1995), we theorize that experiencing low control puts individuals in an unfamiliar state relative to the lessons they learned as children. Because unfamiliar states prompt compensatory processes to regain consistency and meaning (Heine, Proulx, and Vohs 2006), consumers experiencing control-induced unfamiliarity are motivated to return to a familiar state by engaging in other socialized behaviors. Like personal control, developing self-regulation is a critical aspect of childhood socialization (Houck and LeCuyer-Maus 2004) and begins at a remarkably early age (Kopp 1982). Moreover, the socialization of personal control and self-regulation often go hand-in-hand (Houck and Spegman 1999). Because of these relationships between personal control, childhood socialization, and self-regulation, we expect that consumers induced to feel low personal control will respond with increased levels of self-regulation.

Study 1 was aimed to garner initial evidence for our theory. Participants first completed the manipulation of personal control; those in the low (high) personal control condition were asked to write about something that happened that was not (was) because of something they did (Kay et al. 2008). Participants were then asked to write about an experience that implied consistency with childhood

socialization or not (i.e., following parents' advice). They then completed the dependent measure, a series of "everyday decisions" with one response option implying more self-regulation than the other (e.g., "It's the morning. What do you do? Wake up early vs. sleep in"). We expected participants in the low control condition to select more regulated options than those primed to think about following parents' advice, as the latter should be less motivated to behave according to socialization.

Results confirmed our expectations, as the writing task moderated the effect of the control manipulation on subsequent self-regulation ( $p < .05$ ). Participants showed more self-regulation in the low-control than the high-control condition unless they first wrote about following parents' advice, in which case the tendency for low-control participants to self-regulate disappeared.

In study 2, we aimed to extend the above results to other operationalizations of consistency with socialization. Specifically, we reasoned that individuals reporting relatively low levels of personal control at baseline would be more likely to show the increase in self-regulation brought on by our control manipulation, as these individuals should already be at a deficit relative to the level of control implied by childhood socialization. Thus, we first administered five items measuring the extent to which participants felt in control over their lives (Cutright 2012), followed by a manipulation of personal control modeled after ease-of-retrieval style manipulations (Cutright et al. 2013). The dependent measure comprised the same everyday decisions reported in study 1. As expected, the manipulation of personal control was moderated by the individual difference measure of control ( $p < .05$ ), with participants low in baseline personal control more likely than high-control participants to exert self-regulation following the low-control manipulation.

Given this supportive evidence, study 3 aimed to more explicitly examine the role of familiarity that low control induces. Thus, participants first completed the same manipulation of personal control used in study 2. Next, half the participants were asked to write about something with which they were very familiar; the remaining participants were directed to the dependent measure without completing an additional task. To assess self-regulation, we told participants that they would be offered a choice between two snacks upon leaving the lab (granola bar vs. cookies) and asked participants to indicate what snack they wanted. We reasoned that participants who were induced to feel low control would be more likely to make a regulated choice (i.e., the granola bar), but that this would only occur if they had not already returned to a familiar state via the writing task. After making their choice, participants were asked a series of questions about the drivers of their choice, including "doing what felt familiar" and "doing what made you feel like you were in control."

Results supported our expectations: Participants' choices depended on the joint influence of the control and familiarity manipulations ( $p < .05$ ). When participants did not write about a familiar topic, they were more likely to choose the granola bar in the low control (63.8%) than the high control condition (45.7%). This effect did not occur for those in the high-familiarity condition (low control: 39.5%; high control: 52.9%). Critically, a moderated mediation analysis (Hayes 2013) showed that the question about doing what felt familiar mediated choice for those who did not complete the writing task (CI: .02, .86), but not those who had completed the familiarity task (CI: -.21, .47). No other potential mediators showed significant indirect effects, showing that participants' choice of the granola bar was aimed at restoring the sense of familiarity that low control threatened.

Together, these studies show that feeling low control motivates individuals to exert self-regulation due to the unfamiliar state of inconsistency with childhood socialization that low control induces. This research adds to our knowledge about personal control by showing one reason why low control leads to systematic patterns of subsequent behavior. Given the frequency with which consumers experience threats to personal control and the constant necessity of self-regulation, we believe these results are important for researchers, practitioners, and consumers alike.

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## ***Resource Threats Affect People's Sense of Control and Financial Planning***

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Vladas Griskevicius, University of Minnesota, USA

Acquisition of resources is vital for people's survival and well-being. Failure to successfully harness resources from the environment is a threat and is therefore undesirable. However, our lives are rife with inconsistencies in resource availability. In the United States alone, for example, the last 100 years have been marked by 21 different recessions (National Bureau of Economic Research, 2010). How do such resource threats affect consumers' beliefs, decisions and behavior? For example, do they feel that they are in control of their lives during tough times or do they feel that they are helpless? Might these beliefs drive their financial behaviors such as planning for retirement?

Recent work based on life history theory indicates that people respond in adaptive and divergent ways when faced with resource threats depending on their childhood resource conditions (Griskevicius et al. 2013). For example, whereas adults raised in relatively resource-rich environments took fewer risks and became less impulsive under cues of resource uncertainty, those from relatively resource-deprived backgrounds responded to the same cues by taking more risks and becoming more impulsive. In the present work, we add to this literature by investigating the effects of resource threats on people's sense of control and their financial planning behavior. Four experiments show that financial threat consistently reduced the motivation to plan among individuals who grew up resource-deprived. In addition, we identify the psychological mechanism driving this effect, showing that financial threat demotivates people from planning for the future because it reduces their sense of control over their lives.

In Study 1, we experimentally manipulated resource threat by having people read a news article about the recent economic recession or having them read a control article. We then measured their motivation for financial planning by using an adapted version of the propensity to plan scale (Lynch et al. 2009). Results revealed that the recession news article for people growing up with relatively higher levels of family resources, the recession news *decreased* the tendency to plan among those from poorer backgrounds but not for those from richer backgrounds.

In Study 2, we sought to replicate the results of Study 1 by using a behavioral measure of planning. Resource threat was manipulated by asking participants to recall and briefly describe a situation in which they could not financially obtain something that they wanted (Sharma and Alter 2012). In the neutral condition, there was no manipulation, meaning that people simply responded to the measure of financial planning. Then, in an ostensibly unrelated task, respondents were informed that the experimenters were interested in knowing the kinds of information people are interested in learning in the context of retirement planning. They were then provided with a list of topics pertaining to retirement finances that they could choose to learn about. Importantly, they were informed that they could choose as many or as few of the topics they were interested in. The dependent measure was the amount of time respondents spent on learning about retirement planning. Findings conceptually replicated the results of Study 1. Specifically, financial threat led respondents who grew up relatively poor to spend significantly less time on the retirement planning task.

Study 3 had two goals. First, to ensure the robustness of the experimental findings in Studies 1 and 2, we sought to conceptually replicate the results using a third methodology to prime resource threat – a photo slideshow (Hill et al. 2012). Second, we tested whether people's sense of control could be potential mediator of the relationship between resource threat and planning. Resource threat cues were manipulated by having participants view a slideshow with visual images suggestive of economic uncertainty or

control images. Next, participants rated their tendency to plan and their perceived sense of control. Consistent with the results from Studies 1 and 2, Study 3 found that resource threat cues significantly *decreased* tendency to plan only for those growing with lower levels of family resources. Additionally, this effect of resource threat on planning was found to be mediated by people's sense of control.

Study 4 aimed at extending the findings of Study 3. We reasoned that because sense of control appears to be mediating the negative effect of resource threats on planning, boosting control might lead to an increase in planning. Participants were randomly assigned to one of three experimental conditions: financial threat, financial threat with control, or neutral. Financial threat was manipulated using the same procedure as in Study 2. However, prior to this manipulation, participants recalled and described either an ordinary purchase transaction or a time when they felt in complete control of a situation (Whitson and Galinsky 2008). In the neutral condition, participants simply advanced to the dependent measure. Next, all participants worked on the retirement planning task used in Study 2. The time spent reading about retirement planning served as the dependent measure. Consistent with previous studies, we found that whereas threat cues did not affect planning among people from richer backgrounds, the same cues led to significantly reduced planning among those from poorer backgrounds. Importantly, however, enhancing sense of control led to a significant increase in planning in this population. This suggests that an intervention which aims at boosting people's sense of control can help in alleviating the effects of financial threats on planning among those that are most vulnerable.

These studies provide important new insights into the complex relationship between resource threats and people's financial behaviors. It draws on life history theory to explore why people from different childhood backgrounds might plan differently during uncertain times such as economic recessions. It also identifies sense of control as an important variable that guides people's subsequent behaviors pertaining to financial planning. Furthermore, it documents the ameliorating role of a sense of control enhancement intervention in getting people from poorer backgrounds to plan more during tough times. In sum, this work has important implications for public policy professionals and others who wish to foster better financial planning behaviors in people from disadvantaged backgrounds.

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## ***Symposium: A Matter of Taste: Consumer Tastes and Judgments of Artistic Quality***

**Chair:** Stephen Spiller, University of California Los Angeles, USA

### ***Discrepant Beliefs About Quality Versus Taste***

Stephen Spiller, University of California Los Angeles, USA\*

Helen Belogolova, Facebook, USA

Is a cinephile's choice between a superhero movie and a romantic comedy a matter of which is better or which she likes more? Understanding whether consumers believe a choice set is a matter of taste or quality is critical because such beliefs affect behaviors and inferences. The question of quality versus taste is a question of perceived objectivity versus subjectivity. Advice seeking differs between domains of knowledge and domains of preference (e.g., Goethals and Nelson 1973; Gorenflo and Crano 1989; Olson, Ellis and Zanna 1983), but this is typically assumed to vary by domain. Instead, we propose that in addition to domain differences in objectivity, there are individual and situational differences in perceived objectivity for a given domain. For example, in Goodwin and

Darley's (2008) study of moral behaviors, they found disagreement in the perceived objectivity of domains traditionally seen as matters of taste.

Discrepant beliefs about taste and quality have important implications for how individuals reason about the world and others' preferences. We argue that because consumers who believe a choice is a matter of taste recognize the role of the match between the option and the chooser, they will be more likely to reference themselves when explaining their choice than those who believe a choice is a matter of quality. In addition, because consumers believe that quality is an acceptable reason to pay more for a product whereas idiosyncratic factors are not (Bolton, Warlop, and Alba 2003), they are more likely to be willing to pay for their preferred option when it is believed to be a matter of quality rather than a matter of taste.

*Brand Evaluation.* In Studies 1 and 2 (each  $N=200$ ), participants made one brand choice from each of four categories (e.g., Coca-Cola vs. Pepsi). All participants explained their choices, reported whether each choice was a matter of quality or taste, estimated how many participants made the same choice they did, and reported willingness to pay for their preferred option over the alternative. Consumers disagreed about how to classify a given choice: across choices, the minority representation was held by approximately 35% of participants. Believing a choice was a matter of taste (vs. quality) was associated with lower perceived consensus (by about 10 percentage points;  $ps<.0001$ ), greater use of first-person pronouns when explaining their choices (by about 35 percent;  $ps<.0001$ ), and lower likelihood of being willing to pay for one's preferred option (by about 30 percentage points;  $ps<.0001$ ). The latter two effects hold after controlling for the difference in perceived consensus.

What causes such differences in the beliefs about a given domain? Reasoning about the structure of preferences affects beliefs. Prompting consumers to explain why someone else chose a different option than they did should lead them to be more likely to recognize that others have different preferences and therefore believe the choice is a matter of taste. Study 3 ( $N=200$ ) was similar to 1 and 2 except that rather than explaining their own choices, half of the sample explained why another participant chose the same option, and the other half explained why another participant chose a different option. Explaining another's discrepant choice increased the likelihood of rating the choice as a matter of taste by about 13 percentage points ( $p<.05$ ).

*Implications for Transitivity.* One way to examine how consumers' beliefs relate to their reasoning is to examine how they react after observing others' choices. First, viewing an intransitive set of others' choices (Alex chose X over Y, Ben chose Y over Z, but Christine chose Z over X) should lead to a greater likelihood of believing the domain is a matter of taste compared to viewing a transitive set of others' choices (Alex chose X over Y, Ben chose Y over Z, and Christine chose X over Z), because the second is compatible with a single rank-ordering according to quality whereas the first is not. Indeed, in Study 4 ( $N=100$ ), participants who saw interpersonally intransitive sets were more likely than those who saw transitive sets to report that the product domain (search engines) was a matter of taste rather than quality ( $p<.05$ ).

Second, believing a set is a matter of quality (vs. taste) should lead to a greater likelihood of making transitive out-of-sample inferences (e.g., given Alex and Ben's choices, inferring that Christine will choose X over Z) because quality differences are transitive whereas interpersonal taste differences are not. In Study 5 ( $N=400$ ), consumers were shown a set of overlapping choice sets from different people. Those who believed the product domain was a matter of quality were more likely to make transitive out-of-sample inferences than those who believed the domain was a matter of taste ( $p<.01$ ).

Across studies, and contrary to prior research, we find that consumers show little consensus about how to classify an attribute: the minority opinion of taste vs. quality represented one third of participants. These relationships have important implications for bidding



behavior, disclosure by sellers, beliefs about price fairness, and beliefs about others' choices.

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### ***Judging Good Taste: True Preference or Pretense?***

Amit Bhattacharjee, Dartmouth College, USA

Klaus Wertenbroch, INSEAD, France\*

Alixandra Barasch, University of Pennsylvania, USA

Good taste is central to social life. Consumers' need to demonstrate good taste is strongly associated with cultural capital within social groups (Bourdieu 1984). While the costs of acquiring tastes help ensure that they are reliable signals of distinctions between groups (Berger and Heath 2007), they cannot apply to within-group judgments. Within groups, given that quality standards are shared and there are known benefits to demonstrating good taste, how can individuals tell authentic preferences from mere pretentiousness?

We propose that *authentic good taste* is a single-peaked function of the quality of chosen options across repeated choices. Relative to choosing uniformly high-quality options, including some low-quality options may help people signal authenticity to themselves and others. Hence, judgments of *true* good taste, and the corresponding social benefits, may call for a mixture of choice options that suggests the ability to discern quality independently. Supportive evidence comes from four experiments.

Study 1 demonstrates that the presence of bad tastes increases perceptions of authenticity. Undergraduate participants imagined moving into a new dorm and evaluating their new hallmates' answers to an informal "Getting to Know You" survey including lists of their favorite tastes. Participants viewed the 6 favorite magazines of four hallmates (either all male or all female) and indicated their perceptions of these new neighbors. Magazines were chosen to represent either good (e.g., The New Yorker) or bad taste (e.g., Entertainment Weekly), as confirmed using participants' ratings on follow-up measures ( $t(241)=27.39, p<.001$ ). The proportion of good tastes was manipulated among the four hallmates' selections: 0 good magazines and 6 bad magazines, 2 good and 4 bad, 4 good and 2 bad, and 6 good and 0 bad (with presentation order counterbalanced). Gender had no effect and was collapsed.

As expected, perceptions of individuals' good taste increased linearly with the proportion of good magazines ( $F(1,239)=258.84, p<.001$ ). However, perceived authenticity decreased linearly with more good tastes ( $F(1,239)=127.56, p<.001$ ). Importantly, undergraduates' desire to socialize with hallmates (i.e., befriend and seek recommendations) varied quadratically with their proportion of high-quality reading choices ( $F(1,239)=99.77, p<.001$ ), peaking for those selecting some low-quality options. In other words, participants indicated the greatest desire to befriend and solicit reading recommendations from individuals who selected 4 good tastes but also 2 bad tastes, and these individuals were significantly preferred to those with the "best" taste ( $M=4.75$  vs.  $4.38, p<.001$ ). Results held controlling for perceived preference similarity, suggesting participants' judgments were not simply about matching preferences.

Do these effects depend on the particular social meanings of these tastes or subjective perceptions of quality? Study 2 sought to address these possibilities and further rule out potential effects of preference similarity. An online sample of self-described adult wine novices imagined attending a wine tasting event to meet new people. Attendees tried 20 different wines and selected 8 favorites. Participants viewed the wine selections of five different individuals at the event, which were manipulated to contain different proportions of good quality versus lower quality wine (as defined by Wine Advocate numerical ratings and categories): 0 good wines

and 8 bad wines, 2 good and 6 bad, 4 good and 4 bad, 6 good and 2 bad, and 8 good and 0 bad (with presentation order counterbalanced).

Again, results revealed significant linear trends for both good taste ( $F(1,90)=135.15, p<.001$ ), and authenticity ( $F(1,90)=105.37, p<.001$ ), such that perceived good taste increased and perceived authenticity decreased with a greater proportion of good tastes. As in Study 1, participants' desire to befriend individuals and seek their recommendations exhibited a significant quadratic trend ( $F(1,90)=13.24, p<.001$ ), with those selecting the most good taste actually rated the worst on these social outcomes. A significant quadratic trend also emerged on perceptions of individuals' ability in a blind taste test, a measure of independent discernment ( $F(1,90)=17.17, p<.001$ ). Judgments of true good taste peaked for those choosing some lower-quality wines, confirming that those selecting the greatest proportion of good tastes were not judged to have true good taste.

Study 3 tested our mechanism with a misattribution paradigm, using the presence of a free gift to manipulate the signal value of wine choices. Providing a gift to explain low-quality wine choices eliminated differences in predicted blind taste performance ( $p=.821$ ), but social outcomes still favored individuals choosing some low-quality wines across conditions ( $F(1,178)=40.24, p<.001$  overall), underscoring the social importance of perceived authenticity.

While Studies 1, 2, and 3 demonstrate how the presence of bad tastes drives inferences of others' authenticity, Study 4 expanded our investigation to self-signals of authenticity. In particular, we manipulated concerns about good taste versus authenticity and measured the quality of the tastes expressed by participants. An online sample of self-described movie buffs reflected on their taste in movies. They wrote a paragraph discussing whether their taste is truly good, whether their taste is truly authentic, or simply describing their taste (as a control). Next, participants listed 3 movies that they would personally recommend to a friend. The main dependent variable was the quality of these movies according to Rotten Tomatoes, a website that aggregates critical reviews and combines them into one numerical rating.

Invoking authenticity concerns led participants to recommend movies with lower quality ratings ( $M=78.51$ ) compared to the good taste ( $M=84.01, p=.018$ ) and control conditions ( $M=83.94, p=.033$ ). Analyzing recommendations categorically for the presence of bad movies (<75 rating) yielded similar results: compared to both the good taste (39%) and control (43%) conditions, a significantly greater proportion of authenticity condition recommendations included bad movies (64%,  $\chi^2(1)=6.13, p=.013$ ). Interestingly, these participants also judged themselves as significantly more able to truly judge the quality of a given movie ( $M=6.11$ ) relative to the good taste ( $M=5.58, p=.016$ ) and control ( $M=5.47, p=.003$ ) conditions. Hence, participants' increased selection of bad tastes may have worked as a self-signal of authenticity and actually increased self-perceptions of true good taste.

Our findings demonstrate that signals of good taste are subject to authenticity constraints. Occasional low-quality choices help consumers signal authenticity to themselves and others. True good taste may require trading some beauty for truth.

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***Being Lauded is Not the Same as Being Liked: How Creative Control Increases Authenticity which Attracts Accolades, Not Consumers***

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Celebrated products are often rejected by customers. The 2011 film *The Tree of Life*, for instance, won the Palme d'Or at the Cannes Film, but took in just \$13 million domestically at the box office. With a production budget of \$32 million and worldwide box office of \$54 million, the film is considered a commercial flop. The television series *30 Rock* has won 16 Emmy awards and been nominated for 112, but always struggled in the ratings. Apple's Power Mac G4 Cube was introduced at the July 2000 Macworld Expo to great fanfare. *Business Week* called the Cube one of the best products of 2000, *Home Office Computing* crowned it the Product of the Year, and it was the only computer to win a Design and Engineering Award from *Popular Mechanics*. New York's Museum of Modern Art has a G4 Cube on display, yet it was still deemed "a flop at the cash register" with Apple stopping production one year after it was launched.

What is it about a product that makes it exceedingly worthy of acclaim, yet not nearly so appealing commercially? This research introduces the concept of "creative control," the extent to which creators both conceive of and implement their own work, to the literature, and document how creative control impacts which goods are celebrated, but not necessarily preferred. We propose that people take the consolidation of *creative control* under a single entity into consideration when deciding which products are commendable, or stand out above the rest. This is because a consolidated creative process is viewed as generating more *authentic* products, or goods that are "true" to the creator's vision. *Rolling Stone* magazine described *The Tree of Life* as a "... a personal vision that dares to reach for the stars" (Travers 2011). When *30 Rock* premiered, it was described by as an "original vision of a single creator-producer-writer-star named Tina Fey" (deadline.com). Similarly, Apple's legendary chief designer Jonathan Ive, like Steve Jobs, is considered the a visionary; he led the design teams that came up with the G4 Cube, the iMac, Powerbook G4, MacBook, MacBook Pro, MacBook Air, iPod, iPhone and the iPad.

Yet creative control, and the ability to execute one's vision, appears to have no discernible effect on whether consumers actually like the product or not. This is because affinity depends on consumers' predictions or actual hedonic experiences and extraneous information such as creative control, which is not salient during such experience, doesn't generally influence enjoyment of a product. Consequently, for most products, whether the creator's vision is realized doesn't impact enjoyment.

In contrast, comparative evaluations often depend on rules that are easy to justify (Hsee and Hastie 2006). We propose one such rule is that faithful representations of the creator's vision are "more authentic," and thus more worthy of recognition. We thus propose that products associated with greater *creative control* are more likely to attract accolades, but not necessarily customer demand. Further, perceptions regarding authenticity will mediate the effect of creative control on recognition.

We test our hypotheses using both real-world data and laboratory studies. In study 1A, using three different real-world data sets, we document how songs performed by singers who write their own material (i.e. consolidated creative control) are more likely to stand out in terms of having their songs being recognized as standing out among critics. However, the same songs do not stand out in the same way in terms of their commercial success. In study 2, we change domains and document how a movie by a director who writes his or her own script (i.e. auteur) is more likely to receive critical acclaim, yet not stand out in terms of being a fan favorite.

In study 3, we move to the lab where we can demonstrate the same effect with stricter controls. Respondents rate the exact same song as being more worthy of recognition when the performer was described as having exercised more creative control (i.e., also wrote the lyrics and music). Yet they did not report liking the song any better. In Study 4, we show how the perception of authenticity mediates the relationship between creative control and recognition, while presenting evidence of the effect outside the domain of cultural goods as well as for products evaluated primarily in terms of their functionality (such as a water bottle). Study 5 identifies when creative control matters for liking. When consumers view authenticity as central to the consumption experience (which is the case, for instance,

in the case of their experience at a themed restaurant), greater creative control boosts liking as much as it raises likelihood a product will receive accolades.

This work has important implications for better understanding which products we celebrate for their creativity and which ones consumers actually buy. We conclude by discussing some implications for marketers as well as avenues for future research.

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***Selling out: Producer Motives in Markets for Art***

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Markets are founded on the premise that consumers choose products that best meet their needs. Hence, it makes sense for producers to signal a willingness to adjust their products to match consumer preferences. But consider a musical artist who conducts market research to create a song that satisfies consumer needs. Would this song be judged favorably?

Though recent work examines the role of artist identity in judgments of artistic quality (Bar-Hillel et al. 2012; Newman and Bloom 2012), and some theorists describe a disjunction between the demands of audiences and the demands of expert art critics (e.g., Hirschman 1983), this question remains largely unaddressed. Despite the prominence of art within human culture and the pervasive presence of commerce in our market society, little work has examined the psychological determinants of perceived artistic quality within markets.

We investigate consumer judgments of *selling out*, or perceptions that producers have compromised their integrity to pursue external incentives. To provide the first examination of this phenomenon, we examine the influence of perceived producer motives on consumer product evaluations. Four studies identify a key difference between markets for commercial products and artistic products. Consumers reward commercial producers who change their products to suit consumer preferences, but penalize artistic producers who do just the same. People prefer artists who satisfy their own preferences and ignore others' preferences, even those of expert critics whose preferences typically define high quality art. Artists who adjust their products to fit others' preferences are seen as selling out, destroying consumer perceptions of product quality and reducing purchase likelihood. Importantly, our results show that such artistic integrity violations affect product quality only in markets for art, and suggest that consumers apply different standards of producer integrity in commercial markets.

Study 1 demonstrates that judgments of actual experienced song quality depend on perceived producer motives. After listening to a song, participants were less willing to download it when the artist was described as motivated by consumer preferences rather than their own preferences (4.43 vs. 5.63,  $t(92)=3.21$ ,  $p=.002$ ). This motive reduced perceived artistic integrity (4.43 vs. 5.63,  $t(92)=9.11$ ,  $p<.001$ ) and was labeled as selling out (51% vs. 4%,  $\chi^2(1) = 26.58$ ,  $p<.001$ ). Perceptions of artistic integrity mediated the effect of producer motives on consumer perceptions of product quality.

Using the same scenario, Study 2 shows that these results hold even when artists seek to satisfy expert critics whose preferences define high-quality art. We compared artists who adjusted their products to better fit either their own changing preferences, consumer

preferences, or critical preferences, relative to a no-product-change control condition. Motives significantly affected perceived quality ( $F(3,167)=4.60, p=.004$ ). While changes driven by artists' own preferences had no effect on product evaluations relative to maintaining their style (5.51 vs. 5.86,  $p>.288$ ), changes motivated by consumer preferences (4.74 vs. 5.86,  $p=.001$ ) or critical preferences (5.05 vs. 5.86,  $p=.011$ ) decreased perceived quality and were widely seen as selling out (75% vs. 60% vs. 13%,  $\chi^2(1)=50.31, p<.001$ ). Perceived artistic integrity again mediated the effects of producer motives on perceived product quality.

Study 3 identifies an important distinction between artistic and commercial markets. Relative to a producer focusing only on their own preferences, considering customer preferences decreased perceived quality ( $t(59)=-3.01, p=.004$ ) and perceived integrity ( $t(59)=-7.12, p=.004$ ) within four artistic domains (novel-writing, painting, songwriting, filmmaking). In contrast, openly focusing on customer preferences increased perceived product quality ( $t(59)=11.31, p<.001$ ) and integrity ( $t(59)=5.67, p<.001$ ) across four commercial domains (software programming, home contracting, event planning, brand management). These results illustrate that producer integrity is defined differently within artistic versus commercial markets.

Study 4 replicates these results within the same product domain: a photographer who takes photographs intended to be used as art versus commercial products. Participants' product evaluations showed an interaction between producer motives and product usage ( $F(1,156)=21.01, p<.001$ ). Relative to the producer satisfying his own preferences, product changes made to suit customer preferences reduced perceptions of artistic photograph quality (6.15 vs. 4.91,  $p<.001$ ), but improved perceptions of commercial photograph quality (5.17 vs. 6.01,  $p=.010$ ). Measures of artistic integrity mediated these effects on perceived product quality when photographs were meant for artistic usage, but did not affect the perceived quality of photographs meant for commercial usage. These results further confirm our theorized distinction.

Though art and commerce are both central to human society, we illustrate a fundamental difference in what individuals expect of producers within these domains. People penalize artistic producers who change their products to fit consumer tastes but reward commercial producers who do the same. Ironically, consumers most prefer artists who seem to ignore consumer preferences.

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## ***Individual Papers: Understanding the Fourth Dimension: Time***

### ***Conspicuous Consumption of Time: When Busyness and Lack of Leisure Time Become a Status Symbol***

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The lavish expenditure of scarce and valuable resources, such as money and time, can act as a signal of status and wealth. While past research has primarily focused on how the expenditure of *money* has been a vehicle to signal social status, in this research we focus on how the conspicuous expenditure of *time* can lead to the same end. Veblen (1899/1994) suggests that the wealthy consume time unproductively as demonstrated by their ability to live idle lives. Specifically, leisure is defined as the non-productive consumption of time. Thus we would expect that those who have the ability to waste time, and are not busy, would be perceived to have higher levels of social status. However in modern Western society, hard work, ambition, and busyness are respected admirable traits and appear to be associated with success and wealth. Anecdotal evidence suggests that being busy can evoke pride, and is often made public to others through the process of complaining or bragging (Kreider, 2012). We investigate whether a busy or non-busy lifestyle will

indicate higher levels of social status and portray a high aspirational image.

We propose that working hard and busy lifestyles lead to greater inferences of social status in comparison to working less hard and non-busy lifestyles. The underlying paradigm shift for status attribution based on time expenditure may be linked to the development of a highly structured human resources market in advanced economies. In contrast to people who do not work, or work for limited hours, busy individuals might be perceived as highly sought after and desired in the job market. Busyness might speak to the intrinsic qualities and capabilities of the individual who, as a scarce and precious resource herself, is like a rare gemstone and thus perceived to have higher status. Accordingly, we predict that the positive inferences in response to busyness and lack of leisure time are mediated and driven by the perception that a busy person is a scarce resource in high demand. We then consider boundary conditions related to agency, whether working long hours is perceived as a deliberate choice, and find that the positive status attributions associated with busyness at work are muted when an individual is perceived to have no agency in her choice to be busy. We further demonstrate the moderating role of observers' time affluence (Kasser and Sheldon 2009), an individual difference measuring whether one feels pressed for time, and find a stronger effect of busyness for observers who feel their own time is very limited.

A series of experiments test our conceptual model and explore how busyness conveys status in the eyes of others. We uncover the mediating (perceived scarcity) and moderating processes related to the effect (agency over the decision to be busy and time affluence). We employ various methods to manipulate busyness and products related to busyness with participants representing different countries and cultures.

As a preliminary investigation, we first explore Twitter data (1,100 observations) categorized as “humblebrags,” which consist of self-deprecating boasts (Alford 2012), and find that a significant number of them relate to busyness. Inspired by these findings, study 1 (N 352) uses hypothetical Facebook posts to either communicate a busy lifestyle or a non-busy lifestyle, in addition to considering the role of agency. In studies 2A (N 161) and 2B (N 198), in addition to generalizing the effects of busyness and agency from study 1, we also consider the mediating role of scarcity – the degree to which a person is perceived to be scarce and in demand. In study 3 (N 118), we explore the moderating factor of observers' time affluence, an individual difference (Kasser & Sheldon 2009). In this study we also explore perceived ambition as another potential mechanism driving the positive effect of busyness. In studies 4A (N 95) and 4B (N 126), we consider specific marketing implications for brands and products associated with busyness. Specifically in study 4A, we considered two brands: Whole Foods, pretested to be associated with an expensive lifestyle, and Peapod, a service associated with a busy lifestyle. In study 4B, we conducted a similar study but instead of grocery stores, participants considered a person who either wore a Bluetooth ear device (associated with a busy lifestyle) or a pair of gold earrings (associated with an expensive lifestyle). In both studies, we further examine individual level differences in time affluence in the observers. Finally, in study 5 (N 102) we consider how busyness can be used in advertisements to generate an aspirational and high-status image as compared to other types of product positioning. Participants granted more status, and expressed higher aspiration for an individual who used an office exercise ball framed as a saving time product, than one who used that same exercise ball framed as a trendy chair for the office.

In a follow-up study (N 151), we also explore cross cultural responses to busyness at work and we demonstrate a reversal of the effect, whereby busyness leads to lower rather than higher inferences of status.

Recent research suggests that high-status individuals tend to avoid blatant and conspicuous displays of wealth or status, and instead seek alternative ways to differentiate themselves from lower-status individuals (Bellezza et al., 2014; Berger and Ward, 2010; Han et al. 2010). For example, sophisticated luxury consumers elect to use less known and less conspicuous luxury brands. We contribute to this literature by investigating the conditions under which busyness can serve as an alternative, nonconventional signaling mechanism and lead to positive inferences of status in the eyes of others. We demonstrate a nuanced kind of conspicuous consumption that operates by shifting the focus from the preciousness and scarcity of goods, to the preciousness and scarcity of individuals. While

owning expensive products signals status through the value of these material goods, displaying one's busyness and lack of leisure signals status through the value of the person.

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### ***Speeding Away from the Here and Now: Velocity and Mental Representation***

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We experience life at a pace—whether it is “slow as molasses” or “faster than the speed of light.” What, then, is the effect of perceived velocity on the mental representation on things we encounter?

Over a decade of work in construal level theory has demonstrated a relationship between distance from the here and now and mental representation (Trope and Liberman, 2010). However, we can move from the here and now at different rates. The goal of this research is to examine the relationship between the velocity at which we move from the here and now and our mental representation of the world.

Construal Level Theory proposes a bi-directional relationship between psychological distance from a target and the abstractness of the mental representations used to represent that target (Liberman and Trope, 2008; Trope and Liberman, 2010). Whether the distance is temporal, spatial, social, or hypothetical, greater distance is associated with more abstract mental representation.

Work in visual perception suggests that as objects move with faster velocity, people are forced to take on a more gestalt view as secondary features simply cannot be observed. For example, as the speed of objects increases, the number of individual objects that can be tracked in the human visual field decreases (Alvarez and Franconeri, 2007), and when the speed of an object sufficiently increases, it is no longer seen as an object moving across the visual field, but as a single, visually integrated “motion streak” (Geisler, 1999). Visual objects moving at a fast rate force people to rely upon a higher-level, “visual gist” representation.

Thus, I hypothesize that when people feel they are moving at a faster velocity, they are also more likely to rely on abstract, high-level mental representations. The results of three experiments provide evidence of this relationship. Experiment 1 illustrates that greater perceived velocity promotes reliance on more abstract (versus concrete) mental representations. Participants were primed to feel as though they were moving with either fast or slow velocity through a space ship game where white stars moved over a black background with either fast or slow velocity. They then completed a version of the Vallacher and Wegner (1989) behavioral identification form where a series of actions were each described with a high-level action item and a low-level action items. Those participants in the fast velocity condition selected more abstract action identifications. These results provide evidence that the perception of moving at a faster velocity leads participants to rely on more abstract mental representations.

In a bi-directional relationship, Experiment 2 demonstrates that under an abstract (versus concrete) mindset, people perceived visual images as moving with faster velocity. Participants were primed with either a concrete or abstract mindset by asking participants to complete a category (abstract) or exemplar (concrete) manipulation (Fujita, Trope, Liberman and Levin-Sagi 2006). Participants they completed a representational momentum paradigm where a series of static images appeared to be rotating with some implied velocity (Freyd and Finke 1984). Those participants primed in an abstract mindset perceived that these images moved with faster velocity relative to those participants in a concrete mindset.

Furthermore, perceived time moderates the relationship between perceived velocity and mental representation—the greater the perceived passage of time, the stronger the relationship between velocity and reliance on more abstract mental representations in the context of product choice (Experiment 3). Participants completed an alignable v. non-alignable attributes choice task with a fast versus slow moving starfield in the background. Perceived time from the beginning of the choice task to the moment of choice was measured. For participants who perceived that less time had passed during the choice task, there was no difference in the product choice made by velocity. However, for those participants who perceived more time had passed during the choice task, those in the fast velocity condition more strongly preferred the option attractive along non-alignable attributes, consistent with previous work that indicates that when relying on abstract mental representations, people prefer options more attractive along non-alignable attributes.

The results of these experiments demonstrate a relationship between perceived velocity and the relative abstractness of mental representations. Greater perceived velocity promoted reliance on more abstract mental representations (Experiment 1). Under an abstract (versus concrete) mindset, people perceived a series of visual images as moving at faster velocity, with greater implied momentum (Experiment 2). Furthermore, the greater the perceived passage of time, the stronger the relationship between velocity and reliance on more abstract mental representations (Experiment 3). This is the first research to examine the relationship between velocity and the abstractness of mental representations and provides evidence that beyond forcing people to adopt more visually gestalt representations, greater velocity can also promote reliance on more abstract mental representations. These suggest a rich area of future research examining the relationships between velocity, time, and distance in the context of mental representation.

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#### ***Loss Aversion for Time and Money: Reference Dependence in Intertemporal Consumer Choice***

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We demonstrate that consumer time preferences are reference-dependent: time preferences as measured using standard discount-delay tasks reflect not only sensitivity to time but also sensitivity to losses relative to a reference payment amount. We find sensitivity to monetary losses can bias the measurement of time preference, in ways that vary systematically with framing and elicitation method. In Study 1A we examine the relationship between time preference and loss aversion in a correlational study. We measure time preference using a conventional discount-delay titration in which participants chose between a larger-later payment and smaller-sooner payment, with one of these payment amounts changing until the options are deemed equally attractive. We measure loss aversion by asking participants to indicate whether they would accept various gambles that offer a 50-50 chance of gaining or losing various amounts of money, and assessing loss aversion using logistic regression. Surprisingly, we find a strong association between increasing loss aversion and increasing patience, suggesting that people spontaneously adopt the larger-later amount as a reference point and view the smaller-sooner amount as a loss. We also find that a single-item measure of self-reported patience predicts time preference elicited from the discount-delay task, but only after controlling for loss aversion. In Study 1B we replicate these results using distinct time preference and loss aversion elicitation.

In Study 2 we provide stronger evidence for the reference-dependence hypothesis by explicitly framing the time preference task in one of two ways. We set the smaller-sooner amount as the reference point by offering a ‘bonus to delay’ (i.e. potential gain) in delay trials, and we set the larger-later amount as the reference point by requesting a ‘payment to expedite’ (i.e., potential loss) in the



acceleration trials. We find that people are more patient when the time discounting elicitation is framed as a ‘payment to expedite’ than a ‘bonus to delay’ and that this difference is predicted by loss aversion.

In Study 3 we use a more subtle manipulation of reference points to demonstrate reference dependence for both money and time. We also introduce a measure of delay aversion in which people choose between receiving a fixed amount of money at a reference point in time,  $t_r$  or accepting a 50-50 chance of accelerating to a sooner point,  $t_s$ , or delaying to later point  $t_l$ . People are averse to losing time, such that they require a greater acceleration ( $t_r - t_s$ ) than delay ( $t_l - t_r$ ) before they will accept the 50-50 option. We validate this ratio as a measure of both time preference and loss aversion by showing a significant correlation with both discount rates and monetary loss aversion. Moreover, we find evidence of reference-dependence for both money and time. We set reference points by either telling participants that they are entitled to receive the larger-later amount or telling them that they are entitled to receive the smaller-sooner amount, prior to asking them to choose between the two. We find again that more loss-averse participants appear more patient, but only when the reference point is the larger-later amount (so that they must give up money to receive payment sooner). Conversely, we find that more delay-averse people appear more impatient, but only when the smaller sooner amount is framed as the reference point (so that they must give up time in order to receive more money).

In Study 4 we demonstrate that loss-aversion influences borrowing decisions while delay aversion influences investment decisions. We suggest that consumers view borrowing debt as a money loss on the interest paid, but a time gain since money is available sooner. In contrast, consumers view an investment as a money gain on interest earned, but a time loss since the principle is unavailable while invested. Consistent with our prediction we find that more loss-averse consumers demand lower borrowing rates on debt, but we find no differences in investment returns demanded. Conversely, we find that more delay-averse consumers demand higher investment returns, but show no differences in borrowing rates demanded. We also introduce a measure of ‘debt-aversion’ to show that this measure predicts variance in borrow rates not captured by traditional discount-delay tasks or loss-aversion.

In sum, our studies suggest that time preferences as measured using a conventional discount delay task are substantially influenced by loss aversion for both time and money. Thus, standard measures of time discounting do not reflect invariant attitudes toward time but rather are distorted by reference-dependent aversion to losing money and/or delaying payment. Further, we extend these findings to investment and debt decisions to show more loss-aversion consumers demand lower borrowing rates while more delay-averse consumers demand higher investment returns.

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***Spending Time with Mr. Lexus and Paying Money to Doughboy: The Effects of Time and Money on Preference for Anthropomorphized Products***

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Anthropomorphism, or attributing human characteristics to nonhuman entities, has ancient roots in religion, fables, and art. Anthropomorphism has also been pervasive in consumer psychology. One reason people readily anthropomorphize nonhuman entities is that it satisfies their basic need to form social connections (Epley, Waytz, & Cacioppo, 2007). As such, marketers routinely endow products with human traits to enhance their appeal. Indeed, consumers are less willing to discard anthropomorphized products because products seen through an interpersonal perspective are associated with thoughts of social relations—unlike inanimate products, which tend to be associated with instrumentality (Chandler & Schwarz, 2010). However, we believe that extant research linking preference

for anthropomorphized objects with social connection captures only half the story by ignoring the context of consumers' interactions with products. We posit that preference for anthropomorphized products also depends on two such contextual factors: the goal behind the consumption of a product and the behavioral norms salient at the time.

Recent research has shown that manipulating the salience of time versus money can affect people's sociality and instrumentality considerations. Activating the concept of time increases people's desire for social interaction (Mogilner, 2010) and feelings of personal connection (Mogilner & Aaker, 2009), suggesting that it triggers behavioral norms consistent with social connectedness. In contrast, activating the concept of money reduces desire for social intimacy (Vohs, Mead, & Goode, 2006) and increases the functional use of social relationships (Fiske 1992; Vohs, Mogilner, Newman, & Aaker, 2012), suggesting that it triggers behavioral norms consistent with instrumentality.

In this research, we suggest that exposure to a desirable anthropomorphic product will make salient the goal of forming social connections, leading people to prefer it over a nonanthropomorphic counterpart, especially if they are simultaneously exposed to the concept of time (vs. money), which should make salient behavioral norms that encourage interpersonal relationships. Conversely, exposure to a functional goal or a quintessentially functional product will highlight the goal of instrumentality, leading people to prefer anthropomorphized products if they are also exposed to the concept of money (vs. time). The salience of money primes norms that sanction the functional use of a humanlike product, whereas the salience of time primes norms that deem it inappropriate to "use" a human—or humanlike object—instrumentally. People are naturally inclined to form social connections with humanlike objects, but when the object is meant to fulfill an instrumental goal, forming a social connection will no longer be the default response. We tested these hypotheses across three studies.

In Study 1, we examined whether being primed with time (vs. money) indeed increases people's preference for anthropomorphized products in the absence of an overt instrumentality goal. Participants from Amazon Mechanical Turk (MTurk;  $N = 127$ ; 56% male, 44% female; mean age = 31.7 years) were shown an advertisement for a Lexus car with text written in first- or third-person (manipulation of anthropomorphism; Aggarwal & McGill, 2007) and were prompted to consider either spending time or spending money on it (Mogilner & Aaker, 2009). Participants then evaluated the car. Six participants were excluded for failing an attention check. A main effect of the prime emerged after controlling for age and gender,  $F(1, 115) = 11.15, p < .01$ ; importantly, this effect was qualified by an interaction between the prime and anthropomorphism,  $F(1, 115) = 4.24, p = .04$ . Participants exposed to the anthropomorphized car preferred it when primed with time ( $M = 6.95$ ) than with money ( $M = 5.59$ ),  $t(59) = 3.14, p < .01$ ; there were no differences between conditions in preferences for the nonanthropomorphized car ( $M_{\text{time}} = 6.56$ ;  $M_{\text{money}} = 6.01$ ),  $t(58) = 1.31, p = .20$ .

We predicted that these effects of time versus money would reverse when participants viewed products through the lens of a functional goal. In Study 2, participants (MTurk;  $N = 118$ ; 58% male, 42% female; mean age = 31.8 years) completed a scrambled-sentence task with time-related or money-related words (Mogilner & Aaker, 2009). Participants were then given an explicit functional goal of baking cookies for an event and were asked to choose between Nestle and Pillsbury cookie-dough brands. Pillsbury served as the anthropomorphized brand, being associated with the popular Doughboy mascot. Pretest ratings confirmed that Pillsbury ( $M = 3.93$ ) was perceived as more animate, alive, and humanlike than Nestle ( $M = 3.12$ ),  $t(151) = 5.35, p < .001$ . As expected, significantly greater proportion of participants primed with money chose the anthropomorphized Pillsbury brand over the nonanthropomorphized Nestle brand (47.6%) than those primed with time (27.3%),  $\chi^2(1, 118) = 5.15, p = .02$ .

Arguably, the use of real brands in Study 2 could have affected their perceptions on factors other than anthropomorphism. Therefore, in Study 3, we used a product that is consumed only for instrumental reasons: a flu vaccine. As in Study 2, participants (MTurk;  $N = 109$ ; 60% male, 40% female; mean age = 31.1 years) were primed with time or money through the scrambled-sentence task. Next, they read a short message about flu prevention written in first-person (anthropomorphized) or third-person (nonanthropomorphized),

alongside an illustration of a syringe with “eyes” added in the anthropomorphized condition. Participants then rated their likelihood of getting vaccinated. Results revealed an interaction between the prime and anthropomorphism,  $F(1, 105) = 3.97, p = .05$ . In the anthropomorphized condition, participants primed with money reported a greater likelihood of being vaccinated ( $M_{\text{money}} = 57.82$ ) than those primed with time ( $M_{\text{time}} = 29.92$ ),  $t(51) = 2.85, p < .01$ ; in the nonanthropomorphized condition, the type of prime made no difference ( $M_{\text{money}} = 47.19$ ;  $M_{\text{time}} = 47.83$ ),  $t(54) = .06, p = .95$ .

Extending prior work showing that the concepts of time and money make salient behavioral norms consistent with social connectedness and instrumentality, respectively, this research reveals that preference for anthropomorphized products depends on the consistency between the consumption goal and the behavioral norms salient at the time. Moreover, this research contributes to the theoretical understanding of anthropomorphism and shows how the properties of objects, the goals of individuals, and behavioral norms interplay to jointly influence people’s preferences.

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## ***Individual Papers: Why I Buy: The Self and Consumption***

### ***Products as Self-Evaluation Standards***

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The self is a malleable concept and consumers frequently reevaluate the self on different aspects relative to standards set by other people. By affecting consumers’ self-evaluation, self-standards can shape consumer preferences ([Aaker 1999](#)) and thus understanding self-standards in consumption settings is a key interest for marketers.

Extending research on self-evaluation standards ([Festinger 1954](#)), the present research examines whether, when people evaluate aspects of themselves (e.g., how thin am I?), they use not only standards set by other people (e.g., how thin is this model?), but also standards set by products (e.g., how thin is this MacBook Air?). Although ample research finds that consumers perceive products and brands as entities with distinct traits ([Aaker 1997](#)) that can take social roles ([Fournier 1998](#)), the possibility that consumers judge their own traits relative to traits of products has not been examined.

It is hypothesized that product standards affect consumers’ self-evaluation in a direction that is modulated by product ownership: a consumer is predicted to judge her own traits in assimilation with traits of products she owns, but in contrast with traits of products she interacted with but does not own. For example, seeing an ad for a MacBook Air may lead a consumer to compare her own thinness to the slim product she does not own, and thus feel fatter and unattractive (contrast). However, receiving the Mac as a gift may make that consumer feel unity with the thin product and thus feel thinner and attractive (assimilation).

Why should products as self-standards affect how people evaluate themselves and why should ownership modulate the direction of the effect? Research on Egocentric Categorization ([EC, Weiss and Johar 2013](#)) shows that consumers spontaneously classify owned (unowned) objects as “self” (“not-self”). Ample research on how categorization leads to assimilation and contrast ([Bless and Schwarz 2010](#)) finds that people judge a category, such as “self,” in assimilation to items that the category includes but in contrast to items the category excludes. Thus, consumers may judge themselves in assimilation to owned products, which they classify as “self,” but in contrast from unowned products, which they classify as “not-self.” Notably, categorization principles predict this pattern not only for

self-selected items that gained meaning over time (Belk 1988), but also for cases where the decision to own or not to own a product was not made by the consumer (Turk et al. 2011).

Two experiments supported the prediction that owning a product leads people to judge themselves in assimilation to that product, but interacting with an unowned product leads people to judge themselves in contrast from that product, and began testing EC as process. In Experiment 1, as part of a marketing study, participants assessed a 16oz traveling mug of one of two shapes, short and fat or tall and thin. Participants randomly assigned to the “owned” condition received the mug they assessed as gift. Participants randomly assigned to the “unowned” condition received a different mug as a gift, and so did not own the mug they assessed. To capture participants predisposition to classify owned objects as “self” and unowned objects as “not-self,” participants responded to a previously established “Mine-Me” sensitivity measure (Weiss and Johar 2013). As a first DV, participants responded to the Twenty Statement Task, where participants complete 20 self-descriptive statements (“I am \_\_\_”). Next, participants saw seven figures of women or men (based on gender indication collected earlier) of increasing levels of fatness and indicated which of them best captures how fat they felt. Then, participants reported how they feel about their physical height between “very short” and “very tall,” and subsequently completed the “Appearance” subscale of the State Self-Esteem Scale. Finally, participants coded each of their responses to the Twenty Statement Task (1) by whether they referred to their physical appearance and (2) by whether they were relatively positive, neutral or negative.

A repeated-measure analysis controlling for participants actual weight and height revealed that, consistent with our predictions, participants in the “owned” condition who assessed the short-fat (vs. tall-thin) mug felt shorter and fatter (assimilation). By contrast, participants in the “unowned” condition who assess that same short-fat mug felt taller and thinner (contrast). Further, consistent with EC as the underlying process, although the effect was significant on average, this pattern was driven by participants who are predisposed to classify owned products as “self” and unowned products as “not-self,” namely “Mine-Me” sensitive individuals. Finally, a bootstrap mediation analysis revealed that feeling taller and thinner (vs. shorter and fatter) increased, in-turn, overall physical self-esteem, as manifested in both the close-ended appearance self-esteem scale, and in a physical appearance index created from the responses to the open-ended “I am....” questions.

Experiment 2 tested (1) the prediction that the pattern observed in Experiment 1 is mediated by the extent people classified owned products as “self” and (2) the generalizability of the results beyond physical traits to brand personality characteristics. As part of a marketing study, participants assessed headphones that were positioned as either sincere---authentically reproducing sound---or insincere---artificially improving sound. Participants were assigned either to own or not to own the headphones similarly to Experiment 1. As a DV, participants responded to the Social Desirability scale, which allows people to respond either honestly or in a socially desirable manner. To test whether innocuous expected effects on whether people respond in a socially desirable manner can manifest in a consequential behavior, subjects participated in a trivia contest with incentive and opportunity to artificially inflate their performance. Then, to test EC as process, participants reported the extent they classify the headphones they evaluated as “self.”

A bootstrap mediation analysis revealed that, consistent with our predictions, participants assessing the insincere (vs. sincere) headphones in the “owned” condition classified these headphones as “self,” and, in-turn, demonstrated greater social-desirability (assimilation). By contrast, participants assessing the same insincere headphones in the “unowned” condition classified these headphones as “not-self,” and, in-turn, exhibited lower social-desirability (contrast). A second bootstrap mediation analysis with two mediators operating in serial revealed that greater social-desirability predicted, in-turn, insincerity in the contest.

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## ***Double swords of Materialism: Does Materialism Really Lower Self-control?***

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Materialism, an enduring belief in the desirability of acquiring and possessing things (Richins and Dawson 1992), has been widely known to cause self-control failures such as overspending and low commitment to work (Dittmar 2005; Kim 2013; Richins 2011; Watson 2003). However, given materialists' focus on acquisition and possession, it would seem likely that materialists would be concerned with accumulating wealth in order to maximize their purchasing power on a long-term basis. If that is the case, materialists should work hard and manage money carefully, resulting in higher self-control and a tendency to delay gratification (Cherrington 1980; Schor 1991). The current research suggests that both behavioral patterns, indulging oneself and exerting high self-control, are possible consequences of materialism. Materialism may have twofold perspectives, one promoting the financial achievement goal and the other pursuing the immediate enjoyment of material goods, resulting in different levels of self-control. This research introduces a concept of perceived economic mobility as a variable that determines which aspect of materialism to be emerged, in turn, how much self-control to be exerted.

Economic mobility describes how easily people can improve or lower their economic status. While majority of scholarly works focus on measuring economic mobility rates of various groups (Corak 2013), we seek to broaden our knowledge on this topic by examining how subjective perception about economic mobility affects consumers' decisions and behaviors. People have different levels of perception about the dynamicity of their own economic status in society, even within the same society (Fischer 2009). That is, some people perceive that a better economic status can be attained by their own hard work regardless of their origins, while others perceive that it is hard to change the economic status that they are given at birth by their own efforts. We suggest that individuals' perceptions about economic mobility make a difference in how they actualize their material desire. For example, people perceiving high economic mobility will easily associate their material desire with future economic success, since economic success is regarded as an achievable goal by them. Hence, instead of engaging in reckless spending which causes financial ruin, they will be more oriented to work hard and manage money carefully to maximize their lifetime wealth. In contrast, for people perceiving low economic mobility, saving and hard work should be considered fruitless. Their materialistic desire, which is not accompanied by confidence in achieving it, leads them to seek immediate satisfaction with material goods. In short, materialists with high perceived economic mobility are more likely to be engaged in efforts needed for long-term financial success, whereas materialists with low perceived economic mobility are more likely to be engaged in indulgence for current enjoyment. To test this prediction, we presented three studies.

In Study 1, to provide evidence for the interactive effect of materialism and perceived economic mobility in predicting consumers' working attitudes, we conducted a survey in Amazon Mechanical Turk (AMT,  $n=157$ ). The survey included the Materialistic Value Scale (MVS; Richins and Dawson 1992), the Perceived Economic Mobility Scale (PEMS; Yoon and Wong 2014), which consists of eight items (e.g., "Work hard, you will prosper" describes the way this society works), and a working attitudes question, which was adapted from the International Social Survey Program, which consisted of three items. (e.g., I performed to the best of my ability even on a task that I did not like). We regressed working attitude on the MVS, PEMS, MVS x PEMS interaction term, and other demographic information. It revealed a significant interactive effect between MVS and PEMS, and the following spotlight analysis (Aiken and West 1991) showed that materialists work harder than non-materialists when they perceive high economic mobility, but work less hard when they perceive low economic mobility.

In Study 2, we also conducted a survey in AMT ( $n=176$ ) to assess the interactive effect of materialism and perceived economic mobility on spending behaviors. Similar to Study 1, for all of the outcome measures – propensity to plan for money in the long run (LRM; Lynch et al. 2010), compulsive buying (Valence, d'Astous, and Fortier 1988), credit card use (d'Astous 1990), and personal

saving orientation (PSO; Tam et al. 2014) – the interactive effects of MVS x PEMS were significant. Having high materialistic desire led to poor money management, higher compulsive spending and excessive credit card use, and low savings only when people perceived the society as immobile. Conversely, perceiving high economic mobility led materialistic people to stay away from indulgent and reckless spending.

In Study 3, we ran an experiment in AMT (n=149) in which perceived economic mobility was manipulated. Participants read a news article which presented either a high or a low economic mobility condition of the US. People then indicated the percentage of time they would like to allocate for working, the amount of money they would like to save, and their willingness to wait for delayed but higher rewards using an intertemporal choices task. We found that materialism decreased saving intentions and willingness to wait for delayed rewards only in the low mobility condition. Conversely, materialism increased time allocated for working only in the high mobility condition.

In short, the series of studies revealed that materialism can either strengthen or undermine self-control in the money-related domain depending on how mobile people perceive the society as being. This research has several contributions. First, despite the commonly held view that materialism leads to self-control failure (Dittmar 2005; Kim 2013; Richins 2011; Watson 2003), we showed that materialism can promote forward-looking behaviors. The current research presents an extension to materialism's conceptual scope by examining the ambivalent characteristic of materialism. Second, this research provides contributions to the growing body of research on economic mobility. Although the effect of perceived economic mobility on consumer decisions and welfare has started to be investigated in economics, a broad range of inquiries is needed in other domains, especially in marketing and consumer research. Perceived economic mobility has huge potential to affect consumption decisions, and this study would be the first examination of the impact of perceived economic mobility on consumer behaviors.

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### ***The Devil You Know: Service Failures, Self-esteem, and Commitment***

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Why are some consumers likely to switch to available alternatives following service failures whilst others are not? Whilst it is clear that consumers are likely to be loyal when switching costs are high, it is not clear what drives their loyalty when there are no apparent barriers to switching. In this research, we investigate one of the factors that might explain this loyalty. Prior research suggests that individuals with low self-esteem who experience relational transgressions develop an avoidant attachment style, which impairs their interpersonal functioning and their willingness to take further interpersonal risks (Park and Maner 2009), and in particular to engage in other long-term relationships (Walker 2009). Drawing on this research, we propose that low self-esteem (LSE) consumers who experience service failures become unwilling to commit themselves to other brands, even when they have the opportunity to do so, thus – paradoxically – they remain trapped in their current brand relationship. High self-esteem (HSE) consumers, instead, are more likely to switch to other available service providers when they experience service failures, as compared to when they do not experience failures. We also predict that LSE consumers who experience service failures tend to avoid new commitments *in general*, thus favouring transactions relative to long-term contracts, even in consumption domains that are unrelated to the service failure. We tested these predictions in one survey and three experiments.

In study 1a, participants completed a measure of self-esteem (Rosenberg 1989; e.g. “I have a number of good qualities”), and reported the quality of their internet connection (“Considering your Internet usage over time, what percentage of the time does your Internet connection work perfectly?” 0% = *Internet never works perfectly*, 100% = *Internet always works perfectly*.) These questions were interspersed among others in order to disguise the purpose of the study. Finally, participants indicated how likely they would be to switch to a competitor of their current Internet provider, if canceling their current contract were free of charge and the new provider did all the paperwork. We found that as the quality of their internet connection decreased, HSE consumers were more likely to switch to a different provider. However, frequency of failures did not have an effect on LSE consumers’ likelihood to switch. In study 1b, we replicated these findings in an experimental setting: HSE consumers who imagined to use an extremely faulty Internet connection were more likely to switch to an available provider as compared to their counterparts who imagined to use a perfectly functioning Internet connection; LSE consumers did not express different switching intentions between conditions.

Since we had hypothesized that the loyalty of LSE consumers in face of service failures is driven by their avoidance of new long-term relationships, in study 2 we manipulated the length of the contract offered by an alternative Internet service provider. When an alternative service provider offered a long-term contract (1 year) we replicated previous results: HSE consumers were more likely to switch to this alternative service provider as the quality of their internet connection worsened, but LSE consumers were not. Instead, when an alternative service provider offered a short-term contract (1 month, renewable) LSE consumers were as likely as HSE consumers to switch to this provider. In other words, following a service failure, LSE consumers seemed to prefer a short-term contract relative to a long-term contract, which suggests an increased fear of committing to alternative brands.

In study 3, we demonstrate that the fear of new commitments induced by service failures extends to unrelated domains. LSE consumers who imagined to use an extremely faulty Internet connection expressed a greater preference for buying a magazine at the newsstand relative to subscribing to this magazine, as compared to their counterparts who imagined to use a perfectly functioning Internet connection. The preferences of HSE consumers, instead, were not affected by service failures.

In sum, these studies suggest that following service failures, HSE consumers are more likely to switch to a competitor compared to their counterparts who do not experience failures, whilst LSE consumers are not (studies 1a, 1b, and 2). Consistent with the hypothesis that service failures (vs. no failures) make LSE consumers wary of relational risks, thus rendering them avoidant of commitment with alternative brands, LSE consumers increase their preference for low-commitment offers from competitors and decrease their preference for high-commitment offers (study 2), even in unrelated consumption domains (study 3).

This research has significant practical import for marketing, consumer well-being, and policy-making. Consumers who experience service failures can more easily escape a negative brand relationship if they look for low-commitment alternatives; thus, marketers who wish to lure dissatisfied consumers from their competitors, should consider diversifying their offerings and include short-term and low-commitment offers in their portfolio. Moreover, our results suggest that service failures might create generalized distrust in long-term relationships that extends to different consumption domains. In the long run, this could hurt marketing efforts to build trust and committed relationships, and to a growing consumer alienation. Finally, policy makers should take into account that behavioral loyalty is not determined only by switching costs or apathy. Lowering switching barriers to favor competition might not be enough to protect consumers’ rights, but motivating brands to right their wrongs – for example by broadening the scope of class actions – might be an important additional protection for LSE consumers.

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## ***Make it Large or Heavy and it's No Longer "Mine" – The Importance of Physical Control for Psychological Ownership***

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Possessions are instrumental. Through their possessions individuals can experience control and, hence, satisfy their desire to effectively influence their environment (Furby, 1978; Pierce, Kostova, & Dirks, 2001). To a large extent it is the experience of psychological ownership (P.O.) for a certain object that enables an individual to cater to this desire.

P.O. refers to the extent to which an individual feels that something is "mine" (Pierce, Kostova, & Dirks, 2003). One of three key experiences giving rise to P.O. is perceived control over a target object (Pierce et al., 2003). The greater the amount of control an individual experiences, the more likely the controlled object will be psychologically owned. Objects that cannot be controlled or manipulated may have a hard time satisfying the need for effectance. Hence, they are unlikely to become "mine".

A major aspect that determines the extent to which an individual can exercise control over a tangible object are its physical properties. For example, very large or heavy objects can barely be moved or controlled. Yet, large objects are still considered as status symbols and highly popular.

Interpreting the notion of control over an object as the actual capability to physically handle it, we suggest that the properties of an object bear the potential to increase the likelihood of it being psychologically owned. We assume that the smaller or lighter an object is, the easier it can be controlled and the stronger feelings of ownership for it can become.

In two experiments we manipulated physical properties of two objects to see their effect on perceived control over and P.O. for them.

In study 1 we manipulated the weight of three identical looking, non-operating cellphones, resulting in a light (removed from battery and inner workings; 66g), normal (118g) and heavy cellphone (filled up with lead; 292g). 90 participants (49.5% female students, mean age = 21.42,  $SD = 2.83$ ) were randomly given one of the three cellphones with which they had to physically interact i.e. simulate functional, usage oriented tasks like messaging and phoning.

In the subsequent questionnaire, each participant had to estimate the actual weight of the phone in gram. The following items were assessed on a 7-point scale: perceived control exercised over the phone, e.g. "When handling the phone I was in full control over it" (1=totally disagree, 7=total agree; 3 items,  $\alpha = .85$ ), P.O. for the phone, e.g. "I feel a very high degree of personal ownership of the phone" (Shu & Peck, 2011) (1=totally disagree, 7=total agree,  $\alpha = .79$ ) and attitude towards the phone, e.g. "I like this phone" (1=totally disagree, 7=total agree, 3 items,  $\alpha = .85$ ).

All three phones differed significantly in terms of weight estimations,  $F(2, 87) = 58.07, p < .001, \eta^2 = .57$ . Weight estimations and perceived control over the phone significantly correlated with each other,  $r = -.57, p < .001$ .

A univariate ANOVA showed a significant effect of weight on perceived control,  $F(2, 87) = 54.39, p < .00, \eta^2 = .54$ . As expected, the lowest ratings of control were reported for the heavy phone ( $M_{\text{heavy}} = 2.76, M_{\text{normal}} = 5.14, M_{\text{light}} = 5.49$ ). The same pattern was found for the effect of actual weight on P.O.,  $F(2, 87) = 5.65, p = .005, \eta^2 = .12$  ( $M_{\text{heavy}} = 1.48, M_{\text{normal}} = 2.36, M_{\text{light}} = 1.98$ ) and attitude towards the phone  $F(2, 87) = 30.23, p = .00, \eta^2 = .41$  ( $M_{\text{heavy}} = 2.24, M_{\text{normal}} = 4.03, M_{\text{light}} = 4.15$ ). When we inserted perceived control as a covariate, the effect of the boards' actual weight on P.O. disappeared,  $F(2, 86) = 1.97, p = .15, \eta^2 = .04$ . Inserting both, perceived control and P.O. as



covariate, led to a reduction of the main effect of weight on attitude,  $F(2, 87)=23.65, p=.003, \eta=.35$ , suggesting at least a partial mediation.

A follow-up mediation analysis (PROCESS, model 6, (Hayes, 2012) revealed that variations in weight and hence, in perceived control led to a corresponding alteration in the extent of P.O, which, in turn, significantly influenced attitude towards the phone. The entire mediation chain (weight  $\rightarrow$  perceived control  $\rightarrow$  P.O.  $\rightarrow$  attitude) was supported by a 95% bootstrap confidence interval not exceeding zero [-.22, -.02],  $R^2=.52, p=.012$ .

In study 2 we manipulated the size of a wooden cutting board. Three boards were constructed which varied in size, resulting in a small (25 x 17.5 cm), normal (35 x 25 cm) and large board (50 x 35 cm). 97 participants (49.5% female students,  $M_{age}=21.42, SD_{age}=2.83$ ) randomly received one of the three boards and were asked to pretend to do functional, usage oriented tasks like washing the board and cutting on it. The same items as in study 1 were used (all  $\alpha >.80$ ). The actual size influenced size estimates,  $F(2, 94)=68.07, p<.001, \eta^2=.59$ . Size estimates and perceived control significantly correlated with each other,  $r= -.50, p<.001$ .

A univariate ANOVA revealed a significant effect of size on perceived control  $F(2,94)=15.44, p<.001, \eta^2=.25$ , indicating that the largest board elicited the weakest feelings of control ( $M_{large}=4.08; M_{normal}=5.04; M_{small}=5.82$ ). Size also significantly reduced P.O.,  $F(2,94)=5.67, p=.005, \eta^2=.11$  ( $M_{large}=1.78; M_{normal}=2.32; M_{small}=2.84$ ) and attitude towards the board,  $F(2,94)=5.89, p=.004, \eta^2=.11$ , ( $M_{large}=3.81, M_{normal}=4.48, M_{small}= 4.87$ ). Again, when we controlled for the effect of perceived control on P.O. and the effect of P.O. on attitude the main effect of weight disappeared (respectively:  $F_{P.O.}(2,93)=1.33, p=.27, \eta=.03$  and  $F_{Attitude}(2,93)=1.64, p=.20, \eta^2=.034$ ).

A mediation analysis revealed a significant influence of size on P.O. via perceived control. P.O., in turn, significantly affected attitude towards the board. The indirect effect of size, via perceived control and P.O. on attitude was evidenced by a 95% bootstrap confidence interval from -.16 to -.04,  $R^2=.59, p<.001$ .

Concluding, our results attest to the effect of object properties on P.O. We show that P.O. for an object can be deliberately influenced by altering its physical properties. However, when looking at current trends, relatively large products are designed in order to satisfy consumers' need of signaling status (DuBois, Rucker, & Galinsky, 2012). Considering results at hand this trend might backfire as it weakens the bond between an object and an individual.

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## ***Individual Papers: The Devil is in the Construal Level: Construal Theory Effects***

### ***The Persuasive Power of Round Numbers: A Construal Level Theory Perspective***

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Numerical information is everywhere in marketing. One recurrent finding in the persuasion literature is that precise numbers are more persuasive than round ones because individuals tend to associate numerical precision with factualness, objectivity, and confidence (Jerez-Fernandez, Angulo, and Oppenheimer 2013; Schindler and Yalch 2006; Welsh, Navarro, and Begg 2011; Zhang and Schwarz 2012).

The present research, however, finds that round numbers could be more persuasive than precise ones. In addition, we reconcile our prediction and previous research by specifying circumstances under which each pattern will happen. Our core proposition is that round (vs. precise) numbers are associated with longer (vs. shorter) psychological distance and higher (vs. lower) construal level (H1). Then, drawing from construal level theory (CLT; [Trope and Liberman 2010](#); [Trope, Liberman, and Wakslak 2007](#)), we predict and find that round numbers are more persuasive when the judgment is psychologically distant and for chronic or situational high-level construers, whereas the opposite is true for precise numbers (H2).

Our core idea is that the persuasiveness of round and precise numbers depends on the association between round (precise) numbers and distal (closer) psychological distance, and higher (vs. lower) construal level. Now, we elaborate on why this is the case. First, round numbers are associated with broader confidence intervals than precise numbers ([Dehaene 2011](#)). For example, whereas “ninety nine” represents only the exact quantity of 99, “one hundred” may mean anything between 91 and 109. Consistent with this idea, ([Jerez-Fernandez et al. 2013](#); [Welsh et al. 2011](#)) showed that people use round (vs. precise) numbers when they have low (vs. high) confidence about their estimations. Now consider psychological distance. Typically, people are less confident about psychologically distant (vs. close) events because they have less information. Thus, people should use round numbers to describe distal targets because the associated broader confidence intervals provide higher flexibility. For example, people may predict that housing prices may increase 10% next year. They will be right if the actual number will be 8% or 13%. In contrast, people are much more confident with their perceptions of closer events (e.g., gas price tomorrow) and therefore should use precise numbers.

In addition, large literature on CLT has shown that information framed in low (high) construal level is more persuasive when the judgment is psychologically near (distant). This is exactly the case here. Specifically, past research has suggested that numerical precision might be a manifestation of lower level of construal. For instance, ([Janiszewski and Uy 2008](#)) found that precise numbers are more likely to trigger a finer mental scale. Additionally, ([Yan and Sengupta 2011](#)) studied the impact of construal level over the price-quality relationship, and in one study they manipulated the concreteness of the price information by increasing its precision (e.g., HK\$5,199 instead of HK\$5,000), in line with previous findings that have established the link between precision and concreteness ([Alba and Chattopadhyay 1985](#)).

The numerical precision - construal level link has an important implication for persuasion purposes. Previous research has shown the importance of a congruency between an external stimulus and the consumer mind-set to obtain the maximum effect ([Higgins 2000](#); [Higgins et al. 2003](#)). For instance, [Lee and Aaker \(2004\)](#) found that the fit between the message frame and a consumer’s regulatory focus leads to greater persuasiveness of the message. The application of this logic lead to propose that round numbers are more persuasive when the judgment is psychologically distant and for chronic or situational high-level construers (H2).

Four studies examined our predictions. Study 1 and 2 provided support to H2. In study 1 we presented participants (n=141) an scenario where they were having a few days of holidays either at their city (near condition) or in another country (distal condition), and we told them that they needed to buy a digital camera for the trip. The description of the camera was made using either round or precise numbers (e.g. weight 10 Oz vs. 10.1 Oz). The dependent variables were their attitudes towards the camera and purchase intentions. As expected, we observed a two-way interaction. A match between distal (vs. close) spatial distance and round (vs. precise) numbers led to higher attitudes and purchase intentions towards the camera ( $F(1,137)=4.828, p=.03$ ). Planned contrasts showed that for the distant condition attitudes were higher when the camera was described using round numbers ( $M_{\text{round}}=3.74$  vs.  $M_{\text{precise}}=3.21; t(137)=1.75, p=.04$ ); being the opposite for the close condition ( $M_{\text{precise}}=3.73$  vs.  $M_{\text{round}}=3.33; t(137)=1.35, p=.08$ )

In study 2 participants (n=97) imagined that their university (close condition) versus another university (distal condition) was planning to introduce laptops in the classrooms. Then, we presented participants with a laptop described using round or precise numbers

(e.g. 2507 by 1593 vs. 2500 by 1600 pixels of resolution). We replicated the same pattern of results of study 1 and they were significant ( $F(1,93)=5.185, p=.025$ )

Study 3 aimed to find evidence of the link between numerical precision and psychological distance (H1). We employed an Implicit Association Test ([Greenwald, McGhee, and Schwartz 1998](#); [Greenwald, Nosek, and Banaji 2003](#)) to show that participants ( $n=48$ ) associate round (vs. prices) numbers with higher (shorter) psychological distance. In line with our prediction, the IAT score ( $M=.15$ ) is significantly greater than zero ( $t(47)=2.17, p<.05$ ).

Finally, in study 4 we looked for triangulating evidence of the proposed effect by measuring participants' construal level ( $n=78$ ) via the Behavior Identification Form (BIF; [Vallacher and Wegner \(1989\)](#)), and then asking them to evaluate the same laptop used in study 2. To test our prediction we conducted a regression with the continuous measure of construal level via BIF (mean-centered;  $M=18.29$ ,  $SD=5.19$ ), type of number (precise coded as 0, round coded as 1), and their interaction predicting attitudes towards the laptop. As expected, the interaction of construal level and type of number was significant ( $b = .11, t(74)=2.67, p<.01$ ).

Our work contributes to research on persuasion, numerical cognition, and construal level theory. First, persuasion is a crucial goal within the marketing field, and we identify a boundary condition of previous findings that suggests the "precision advantage" on persuasion. Additionally, we establish a previously unexplored link between numerical precision and psychological distance. Furthermore, the use of CLT as our theoretical framework gives marketers the ability to choose when to use either round or precise numbers based on goal.

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### ***Understanding the Psychology of Scarcity: When Limited Resources Prompt Abstract Thinking***

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Scarcity is a prevalent condition that characterizes human existence. Mankind has regularly experienced periods of famine and draught ([Chakravarthy & Booth, 2004](#)), modern economies often must cope with economic recessions ([Griskevicius et al., 2013](#)), and even in resource-rich environments people routinely encounter cues that emphasize the limited nature of products and resources ([Cialdini, 2009](#)). As a consequence, people often think and talk about scarcity-related concerns ([Twist & Barker, 2006](#)). However, in spite of the frequency of cues and cognitions related to scarcity, our understanding of the psychological processes that result when the concept of scarcity is activated remains relatively limited.

In order to address this, we consider the role of scarcity as an obstacle to goal pursuit, and its implications for cognitive processing. Prior research has shown that obstacles to goal pursuit can promote abstraction in thought ([Marguc et al., 2011](#)). This is beneficial for goal attainment as abstract processing facilitates the identification of alternative means to pursue the goal ([Marguc et al., 2011](#)). Indeed, abstract thinking has been shown to improve people's ability to reconfigure elements and to identify alternative solutions by broadening one's considerations ([Trope & Liberman, 2010](#)). Similarly, research on creativity has demonstrated that constraints (e.g., input restrictions, time limits) imposed on a creative process tend to promote creative thinking by forcing people to think beyond their default responses ([Moreau & Dahl, 2005](#)).

We draw from this literature in order to argue that scarcity-related cues will cause people to construe information more abstractly and categorize items more broadly. Scarcity-related cues signal that resources may be insufficient to satisfy demand (Greenberg, 1981). Because a lack of sufficient resources presents an obstacle to achieving one's goals in the most straightforward fashion (Hill et al., 2012), we contend that reminders of resource scarcity will promote abstraction in thought that can be detected on subsequent unrelated tasks. Testing this prediction is important because it allows for a better understanding of the psychological consequences of scarcity and their implications.

First, to test whether scarcity-related cues promote abstraction in thought, participants were exposed to either a scarcity or a neutral prime (Fischhoff et al., 2003) prior to having to complete the Behavior Identification Form (BIF; Vallacher & Wegner, 1989), which assesses people's level of representation (abstract "why" vs. concrete "how") of 25 different activities. In line with our prediction, participants primed with scarcity were more likely to select higher-level representations of behaviors ( $M = 17.05$ ) than participants exposed to a neutral prime ( $M = 14.81$ ;  $p = .054$ ).

Having demonstrated that scarcity can promote abstraction in thought, experiment 2 tested for convergence using a categorization measure. Prior work has demonstrated that abstract thinking assists in navigating obstacles to goal pursuit by broadening one's considerations (Marguc et al., 2011). This suggests that if scarcity-related cues are interpreted as obstacles to goal pursuit, they should likewise broaden conceptual categories. Experiment 2 thus manipulated scarcity (vs. no scarcity) with a listing task (Roux et al., 2014), where participants had to list three things they "cannot do" (vs. "can do") when different resources are unavailable (vs. available). Participants then completed a categorization task (Wakslak et al., 2006), where they had to categorize three different lists of items (camping trip, household, and yard sale items) into groups. In line with our prediction, participants primed with scarcity classified the items into fewer categories overall ( $M = 6.12$ ) than those in the neutral prime condition ( $M = 6.64$ ;  $p = .047$ ). Specifically, participants used fewer categories to classify camping trip ( $M_{scarcity} = 5.16$ ;  $M_{no\ scarcity} = 5.75$ ;  $p = .024$ ) and household items ( $M_{scarcity} = 6.41$ ;  $M_{no\ scarcity} = 7.10$ ;  $p = .026$ ). The effect of scarcity on the number of categories used to classify yard sale items did not reach significance ( $M_{scarcity} = 6.78$ ;  $M_{no\ scarcity} = 7.06$ ;  $p > .4$ ). This is consistent with results found in prior experiments using similar dependent measures (Lieberman et al., 2002).

Having shown that scarcity promotes abstract processing and broadens categorizations, this suggests that individuals' psychological reaction to scarcity may be well suited for navigating the obstacles that scarcity presents. Further, prior research has also demonstrated that abstract thinking increases the inclusion of atypical exemplars into a given category (Lieberman & Trope, 2008). In order to provide convergence with the results of experiment 2, experiment 3 tests the effect of scarcity-related cues on inclusiveness.

Experiment 3 manipulated scarcity (vs. no scarcity) using the same manipulation as in experiment 2 prior to having participants complete a category inclusiveness task (Huang & Galinsky, 2011; Isen & Daubman, 1984), where they had to rate the extent to which strong, intermediate, and weak exemplars belonged in a given category. In line with our prediction, participants primed with scarcity demonstrated greater category inclusiveness overall ( $M = 7.97$ ) than participants exposed to a neutral prime ( $M = 7.67$ ;  $p = .021$ ). Specifically, participants demonstrated greater category inclusiveness for medium ( $M_{scarcity} = 8.14$ ;  $M_{no\ scarcity} = 7.75$ ;  $p = .04$ ) exemplars. A similar pattern of results emerged for the weak exemplars ( $M_{scarcity} = 5.90$ ;  $M_{no\ scarcity} = 5.48$ ;  $p = .07$ ), but not for the strong exemplars ( $M_{scarcity} = 9.87$ ;  $M_{no\ scarcity} = 9.77$ ;  $p = .13$ ), consistent with prior work (Huang & Galinsky, 2011).

In summary, the findings presented here advance our understanding of how being exposed to scarcity-related cues affects one's psychological orientation. Across three studies, we demonstrate that scarcity leads to more abstract levels of construal and broadens categorizations, which may constitute an adaptive response to overcoming the obstacles associated with scarcity. Although further

research is necessary to fully understand the boundaries of this effect, this research provides an important step towards a better understanding of the psychology of scarcity and its consequences.

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### ***The Effects of Construal Level On Fit Perceptions***

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Construal level theory suggests that entities can be represented at increasing levels of abstraction, from extremely detailed and contextualized (i.e., concrete) to extremely detail-free and decontextualized (i.e., abstract; Liberman and Trope 2008). Interestingly, one can use construal level theory to derive opposing predictions in the domain of fit perceptions—or perceptions of whether a target entity is congruent with another entity. On one hand, abstract thinkers are more likely to stereotype versus concrete thinkers, leading to lower perceptions of fit between a person and a job (McCrea, Weiber, and Myers 2012). From this point of view, abstraction may lead to a more limited perspective of a target entity and lower perceptions of fit. However, recent research by Xu, Jiang, and Dhar (2013) demonstrates that abstract thinking leads to greater perceptions of similarity between items in an assortment, suggesting that increased abstraction leads to higher perceptions of fit between two entities. From this point of view, abstraction may lead to a less limited perspective of a target entity and greater perceptions of fit. Thus, it is as yet unclear as to how construal level affects perceptions of fit. Is a “stereotyping” effect more (less) likely to emerge for abstract (concrete) thinkers (e.g., “Nike is a stereotypical sporting goods provider. They wouldn’t make X.”), or are abstract (concrete) thinkers more (less) likely to think along the lines of “everything is similar”, leading to greater (lower) perceptions of fit (e.g., “Nike makes things, X is a thing, the extension is reasonable.”)?

We suggest that the answer to these questions depends on the degree of construal, either abstract or concrete. Construal level is not just a static state of mind, but also a continuum and a process (Trope et al. 2007) and this process is illustrated in the stimuli used to prime construal levels. For instance, in the classic “why” versus “how” manipulation (Liberman et al. 2007), individuals categorize the focal entity at increasingly superordinate (subordinate) levels by subtracting (adding) details—the construal level one reaches depends on the number of details added or subtracted, which may affect perceptions of fit. Therefore, we hypothesize that a “stereotyping” effect will emerge at moderate levels of abstraction (i.e., abstract < concrete), but allowing individuals to add or subtract additional details should reverse the “stereotyping” effect (i.e., abstract > concrete). This occurs because further decreasing (increasing) the number of details associated with a target should lead to a more (less) limited perspective of the target entity, which will increase (decrease) perceptions of fit.

In study 1, we examined the effect of construal level on perceptions of fit and attitudes. Based on our theorizing, we expected a cubic effect such that perceptions of fit would first increase from very concrete to moderately concrete, then decrease from moderately concrete to moderately abstract, then increase again from moderately abstract to very abstract. To test this hypothesis, we measured construal level using a categorization task. Specifically, participants were shown a picture of a bowl of blueberries and were asked to estimate the minimum and maximum number of blueberries in the bowl. The minimum estimate was subtracted from the maximum estimate, which served as a measure of abstraction (i.e., broader estimates = more abstract (Kruger et al. 2014)). Next, participants were presented with a moderately incongruent brand extension (Nike deodorant) and were asked to indicate perceptions of fit and attitude toward the extension. As hypothesized, a HLM indicated that the model which contained the cubic abstraction term best fit the data (vs. quadratic or linear), and the pattern was in the expected direction for both fit perceptions and attitudes.

In study 2, we investigated the effects of construal level on fit perceptions in the domain of goals. It has been shown that given an active goal, individuals tend to block the activation of competing goals (Shah, Friedman, and Kruglanski 2002). In this study, the focal goal was attaining a good GPA while the secondary activity was playing music. We employed a 2 (construal level: abstract vs. concrete) x 2 (degree of construal: moderate vs. high) between-subjects design. Undergraduate students were asked to contemplate their academic goals in an abstract (i.e., “why?”) versus concrete (i.e., “how?”) manner for a short (15 seconds) or a long (30 seconds) time. First, we coded responses to the why/how manipulation for levels of abstractness. Supporting our theorizing, allowing abstract (concrete) thinkers additional time to elaborate resulted in more abstract (concrete) thoughts. Additionally, for abstract (concrete) thinkers, perceptions of fit between the music program as well as attitudes toward the music program were higher (lower) in the high (moderate) extent condition. Finally, in the moderate (high) extent condition, abstract (concrete) thinkers perceived less fit and had less positive attitudes.

In study 3, we investigated a boundary condition for our effects while utilizing a different manipulation of construal—physical distance. This study employed a 2 (construal level: abstract vs. concrete) x 2 (degree of construal: moderate vs. high) x 3 (extension fit: low vs. medium vs. high) between-subjects design. We hypothesized that our effects would emerge when the extension is moderately congruent, but not when the extension is highly congruent or highly incongruent. Participants were asked to consider McDonalds chocolate (moderately congruent), McDonalds onion rings (highly congruent), or McDonalds razor (highly incongruent) which were to be launched in either the same city (very concrete), the next state over (moderately concrete), across the country (moderately abstract) or on a different continent (very abstract). In line with expectations, the effects on perceived fit and attitudes mirrored the crossover effects that emerged in study 2 only in the moderately congruent condition, with no significant effects in the highly congruent and highly incongruent conditions.

Our research contributes to construal level theory by identifying the degree of construal as a new and important moderator of the effects of construal, thereby providing further insight into the process of construal and replicating as well as reversing prior findings on construal and categorization (McCrea et al. 2012).

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### ***Construal Level as a Strategy to Cope with Ambivalence***

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Ambivalent attitudes are characterized by evaluative inconsistencies; that is, positive and negative evaluations about an object simultaneously exist within a person. People are motivated to resolve evaluative inconsistencies, because they induce unpleasant feelings of distress and discomfort (e.g., Maio, Bell, & Esses, 1996). In this research, we examine whether different levels of construal is more or less effective in reducing uncomfortable feelings that stem from attitudinal ambivalence.

We hypothesize that a high vs. low construal level is more or less effective in reducing ambivalence-related discomfort depending on the person’s desire for control (DC). When people are in high DC, ambivalence is especially uncomfortable for similar reasons as dissonance. Existence of inconsistencies takes away their control over the environment and threatens the desired consistent view of the self and the world (Festinger, 1957). They want to come up with a single, unequivocal evaluation of the ambivalent object and thereby resolve inconsistencies so that they regain the control. By focusing on high-level features of the object, ambivalent individuals are

able to integrate and resolve the underlying evaluative inconsistencies. In contrast, people possess low DC are not as threatened by the existence of inconsistencies. Nevertheless ambivalence feels uncomfortable especially when they need to make a decision (van Harreveld, van der Pligt & de Liver, 2009). Their concern is to make a quick, confident decision rather than to resolve inconsistencies altogether. Adopting a low-level construal facilitates decision as they can base their decision on a single attribute that seems most important and is easily accessible.

In sum, we hypothesize that people in high (vs. low) DC benefit from high-level (vs. low-level) construal in coping with ambivalence. Ambivalence feels uncomfortable for different reasons depending on how much the person needs control. When in high DC, high-level construal is effective in reducing discomfort, because the immediate concern is to resolve inconsistencies. In contrast, when in low DC, low-level construal is effective, as the concern is to decide.

We test the above hypotheses in three studies. In all studies, we used ‘fast food’ as a target object/topic, because we know from the pretest that our participants are highly ambivalent about fast food. To test our hypotheses, we either directly manipulated or measured participants’ DC, and examined whether high vs. low construal level is effective in reducing their unpleasant feelings associated with fast food.

Study 1 directly tested the main hypothesis. It involved a task that required participants to write an essay about their opinion on banning fast food on campus. The design of the study was a 2 (DC: high vs. low)  $\times$  2 (construal level: high vs. low) between-participants design. First to manipulate DC, we made half the participants recall a situation over which they had complete control (i.e., low DC) and the other half a situation over which they had no control (i.e., high DC). Participants were then informed that later they would need to take a position about banning fast food on campus and write an essay on it. Before proceeding to the essay, they completed a superordinate or subordinate category generation task as a construal-level manipulation (Lieberman, Sagristano, & Trope, 2002). Then they reported how much they felt uncomfortable, conflicted, and mixed about the topic; we combined these ratings to create an index of unpleasantness, which is our main dependent measure (Newby-Clark, McGregor, & Zanna, 2002). As expected, we found a significant interaction between DC and construal level. Participants in low DC reported less unpleasant feelings associated with the ambivalent topic when they were put in low construal level compared to when in high construal level, whereas the opposite was the case for those in high DC.

The goal of Study 2 was first to replicate Study 1 with a different population and to better understand why and how need for control might render different coping strategy more or less effective. Participants in this study were asked to write an essay about their opinion on whether the government should impose higher tax on fast food. The procedure was identical to Study 1 but we inserted individual the decisiveness and intolerance for ambiguity scales (subscales of the NFCC scale, Kruglanski, Webster, & Klem, 1993) to see whether such individual differences interact with our manipulations. The study essentially replicated the results from Study 1. More importantly, we found a significant interaction between the individual difference measures and the DC manipulation. Participants in low DC benefited from having a low construal level particularly when they were highly decisive. And participants in high DC benefited from having a high construal particularly when they were highly intolerant for ambiguity. The results are consistent with our theorizing that people high in DC is more concerned with resolving inconsistencies while people in low DC is more concerned with making any decisions.

The goal of Study 3 was to test whether people in high vs. low DC indeed find ambivalence unpleasant for different reasons. If people in high DC feels unpleasant for similar reasons as dissonance, self-affirmation, which is known to be effective in reducing dissonance (Steele, 1988), should be effective in reducing discomfort only for those in high DC but not for those in low DC. The design of the study was 2 (DC: high vs. low)  $\times$  2 (construal level: high vs. low)  $\times$  2 (self-affirmation: present vs. control) between-participants. In this study, we used different operationalizations of the relevant constructs. We measured DC using the desirability of control scale (Burger

& Cooper, 1979) instead of manipulating it and median-split the sample. And we manipulated construal level by making participants directly think about fast food's attributes vs. try to come up with a comprehensive evaluation of fast food. The results of the study again produced the same pattern as in Study 1 & 2. More importantly, when participants self-affirmed, it reduced reported unpleasantness only for those are in the high DC condition, supporting our hypothesis that high DC people but not low DC people find ambivalence unpleasant due to dissonance.

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## ***Individual Papers: The Benefits of Marketer Transparency***

### ***Creating Reciprocal Value Through Transparency***

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Ranging from open kitchens at fast food restaurants like Subway to high-end dining at Michelin-rated restaurants, companies are increasingly embracing transparency—in the form of visual contact between consumers and employees—to enhance consumer experiences. But does seeing the process actually generate substantive benefits, and if so, for whom? A longstanding tenet of operations theory is that contact between consumers and producers diminishes efficiency and production performance (Chase, 1978). Accordingly, organizations often aim to buffer their core processes from such environmental disturbances (Thompson, 1967) and to assert greater control over the process when consumers are likely to introduce uncertainties (Tansik & Chase, 1983). However, more recent research suggest that these findings are equivocal and highlight the possibility that transparency could achieve positive outcomes (Buell & Norton, 2011; Mohr & Bitner, 1995; Morales, 2005). Across two field and two lab experiments in food service contexts, the current research investigates the notion that reciprocal transparency, where both consumers and employees can see each other, can improve both consumer experiences and objective service quality.

Experiment 1 tested the effects of transparency on the value perceptions of customers. We surveyed 328 customers who ordered food from the dining hall grill station over a two-week period. The station offered made-to-order items, which were cooked in a kitchen area separated from the dining hall by an opaque wall. We introduced transparency by installing a pair of iPads with video conferencing software: one in the kitchen for the chefs, and another by the order station for the customers. With these “virtual windows,” we investigated the directional effects of transparency in a 2(customers: observe, do not observe the chefs) × 2(chefs: observe, do not observe the customers) experimental design. A univariate ANOVA revealed one main effect and one interaction. Customer perceptions of service value were higher when chefs could observe the customers ( $M=4.95$ ,  $SD=0.10$ ) than when they could not ( $M=4.46$ ,  $SD=0.10$ ),  $F(1, 324)=14.37$ ,  $P<0.01$ . Furthermore, there was a significant interaction,  $F(1, 155)=7.31$ ,  $P<0.05$ : when chefs could not observe customers, whether customers saw the chefs ( $M=4.43$ ,  $SD=1.13$ ) or not ( $M=4.48$ ,  $SD=1.48$ ) did not make a difference,  $t(155)=0.37$ ,  $P=NS$ . However, when chefs observed customers, customers perceived higher value of service when they observed chefs ( $M=5.19$ ,  $SD=0.10$ ) than when they could not ( $M=4.70$ ,  $SD=0.14$ ),  $t(169)=2.92$ ,  $P<0.01$ . Customer assessment of food quality followed the same pattern. Furthermore, when both chefs and customers could see each other, chefs produced each meal order significantly *faster* than when they could not see each other ( $\beta=-8.33$ ,  $P<0.01$ ).

Experiment 2 tested whether the perceived and objective differences in evaluated performance were distinct effects. The study was conducted in a separate dining hall that serves a non-overlapping group of customers. 48 participants pre-ordered a sandwich online



and were randomly assigned to one of two conditions for pickup: those in the blind condition were escorted directly to a cooler to pick up the pre-made sandwich they ordered. Those in the transparency condition waited in line to view the sandwich-making process before being escorted to the same cooler to pick up their pre-made sandwich. Despite the fact that sandwiches in both conditions were pre-made, those in the transparent condition ( $M=0.27$ ,  $SD=0.71$ ) perceived the service to be more valuable than customers in the blind condition ( $M=-0.27$ ,  $SD=0.53$ ;  $t(46)=3.02$ ,  $P<0.01$ ), supporting the notion that transparency enhances customer perceptions of value.

Experiment 3 tested what role reciprocity and perceptions of effort played in the relationship between transparency and perceived value of service. 86 participants were randomly assigned to watch one of three videos portraying a service interaction at a cafeteria sandwich counter, from the customer's perspective. Each video represented a different type of transparency: 1) the customer did observe chef, 2) the customer observed chef, but not the cooking process, or 3) the customer observed both chef and the cooking process. Participants who observed the chef and the process reported higher perceived value ( $M=5.33$ ,  $SD=1.34$ ) than those who observed the chef but not the process ( $M=3.97$ ,  $SD=1.94$ ),  $t(56)=3.08$ ,  $P<0.01$ ; and those who observed neither the chef nor the process ( $M=4.42$ ,  $SD=1.70$ ),  $t(53)=2.21$ ,  $P<0.05$ . Feelings of reciprocity and perceived effort followed the same pattern. Further, we found feelings of reciprocity and perceived effort mediated in serial the main effect: seeing the chef and the process enhanced perceptions of service value by increasing perceptions of employee effort and feelings of reciprocity toward the employee.

Experiment 4 tested whether reciprocity accounted for the objective improvement in employee service performance. 231 participants were randomly assigned to view one of the three dining service interaction scenarios in Experiment 3, this time from the chef's perspective. Thus, participants assumed the chef's role 1) who made the sandwich in the kitchen without seeing the customer at all, 2) meeting the customer outside the process (i.e., not preparing the sandwich in front of the customer), and 3) meeting the customer throughout the process (i.e., preparing the sandwich in front of the customer). Relative to participants who did not see customers, intended effort was higher both for those who saw the customer outside the process ( $M=5.42$ ,  $SD=1.18$ ),  $t(154)=2.14$ ,  $P<0.05$ , and throughout the process ( $M=5.52$ ,  $SD=1.07$ ),  $t(151)=2.74$ ,  $P<0.01$ , and the difference between the two transparent conditions was not significant ( $P = NS$ ), indicating that employees' willingness to exert effort (Experiment 1) was sparked by their ability to see the customers. Further, we found that feelings of reciprocity mediated the relationship between seeing the customer and increased effort.

These results suggest that *seeing the work* can cause consumers to better appreciate the effort exerted by employees, increasing their perceptions of service value. *Feeling appreciated* can cause employees to exert more effort on behalf of consumers, leading to better performance. In a culture where speed and automaticity often trump other values, we suggest that seeing and appreciating the people who provide us, and allowing them to see us in return, can lead to experiences that are objectively better and more fulfilling for everyone involved.

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### ***Lifting the Veil: The Benefits of Cost Transparency***

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A firm's costs are typically tightly-guarded secrets. However, a significant body of literature on the social psychology of disclosure suggests that those who disclose intimate information can be seen as more likeable and attractive (Collins & Miller, 1994; Laurenceau, 1998; Moon, 2000). We suggest that cost transparency – revealing a firm's variable costs of production – is a particularly intimate

form of disclosure by a firm to the consumer. Using six laboratory experiments and a field study, we examine the effect of cost transparency on consumer purchase behavior.

In study 1, we tested the effect of cost transparency on customers' willingness to buy in a simulated online retail environment. Participants saw an online shopping interface featuring a model wearing a t-shirt. This interface served as the baseline in all of our experiments. In the operational transparency condition, an additional infographic depicted six operational steps to produce the t-shirt – cotton, cutting, sewing, dyeing, finishing, and transport. In the cost transparency condition, the true cost of each of the six operational steps was also provided, i.e., \$2.75, \$0.35, \$1.35, \$0.50, \$1.25, and \$0.50 respectively. Participants indicated their willingness to buy the t-shirt on a 7-point scale. Willingness to buy was greater in the cost transparency condition relative to both the control condition ( $M_{\text{cost}} = 4.16$  vs.  $M_{\text{control}} = 3.31$ ,  $t(177) = 2.95$ ,  $p < 0.01$ ) and the operational transparency condition ( $M_{\text{operational}} = 3.57$ ,  $t(180) = 2.10$ ,  $p = 0.04$ ).

In study 2, we tested whether a weak form of cost transparency - simply divulging the total summed cost to produce the product - is sufficient to be beneficial. Cost transparency was found to be more effective in boosting purchase interest in a \$10 t-shirt than summed cost alone ( $M_{\text{cost}} = 4.91$  vs.  $M_{\text{sum}} = 4.07$ ,  $t(185) = 3.45$ ,  $p < 0.01$ ), which was not significantly better than the control condition ( $M_{\text{none}} = 4.15$ ,  $t(197) = 0.77$ ,  $p = 0.90$ ).

Importantly, Study 2 also explored the process underlying the beneficial effect of cost transparency. We measured a potential mediator, attraction to the brand, using a modified version of Moon's 4-item (2000) scale ( $\alpha = .93$ ). Relative to control, brand attraction was significantly higher in the cost transparency condition ( $M_{\text{cost}} = 5.40$  vs.  $M_{\text{control}} = 4.86$ ,  $t(200) = 5.33$ ,  $p < 0.01$ ). Consistent with previous research on disclosure and attraction, the effect of cost transparency on willingness to buy was fully mediated by consumers' attraction to the disclosing firm (95% CI: 0.32, 0.81); we replicated this finding thrice in the following studies.

It is possible that the beneficial effect of cost transparency in study 1 and 2 was driven by the specific allocation of costs among the different cost components. In study 3, we tested whether the results generalize to unfavorable cost allocations (i.e. when costs of intangible components – such as transportation – are relatively high). Relative to control, willingness to buy was significantly higher in both favorable and unfavorable cost allocation conditions ( $p$ 's  $< 0.01$ ). The difference between disclosing favorable and unfavorable cost allocations was not significant ( $M_{\text{favorable}} = 4.90$  vs.  $M_{\text{unfavorable}} = 4.86$ ,  $p = 0.60$ ). Thus, we found that the capacity for cost transparency to boost willingness to buy persists even when costs are allocated in a relatively undesirable way.

In study 4, we tested whether cost transparency substitutes or complements consumer-brand relationships. Participants were told that a brand was either a familiar or new brand. There was no interaction between brand relationship and transparency ( $(F(1,325) = 0.32$ ,  $p = 0.57)$ ). Thus, we found that brand relationship does not moderate the effect of cost transparency on willingness to buy – cost transparency is appealing to consumers regardless of their prior relationship with a brand ( $M_{\text{cost}} = 4.52$  vs.  $M_{\text{control}} = 3.96$ ,  $t(327) = 2.65$ ,  $p < 0.01$ ).

Of course, not all disclosure leads to attraction; prior research suggests a curvilinear relationship between disclosure intimacy and liking (Cozby, 1972). In study 5, we tested how revealing high profit margins (i.e., a high price relative to cost) moderated the effect of cost transparency on a consumer's willingness to purchase a good from a firm. We used the online website of a popular department store to determine a relevant range of t-shirt prices (\$10-\$100), and manipulated the price of the product while keeping costs constant. As expected, willingness to buy decreased as price increased ( $F(1,954) = 121.2$ ,  $p < 0.01$ ). Moreover, there was a significant

interaction between price and cost transparency on willingness to buy ( $F(1,954) = 6.05, p = 0.01$ ) The benefits of cost transparency weakened – but did not reverse – when a firm disclosed higher prices relative to cost.

When might cost transparency backfire? Although consumers understand and accept that firms must make profits (Bolton, Warlop, & Alba, 2003; Kahneman, Knetsch, & Thaler, 1986), they punish firms that violate established norms of price fairness (Campbell, 1999; Xia, Monroe, & Cox, 2004). In study 6, we tested whether making a markup more salient would diminish the effectiveness of cost transparency. For instance, we noted that a similar shirt sold by a competitor is priced at \$25, a 3.7X markup over the estimated cost of production. Thus, at the \$30 price point, the firm's markup of 4.5X was higher, and therefore, less desirable than that of its' competitor. Relative to the control, willingness to buy was significantly lower versus the control when an undesirable markup was made salient ( $M_{\text{markup}} = 2.17$  vs.  $M_{\text{control}} = 3.34, t(60) = 2.37, p = 0.02$ ). This suggests that when markups are counter-normatively high compared to competitors, cost transparency diminishes purchase intentions.

Our final study was a natural experiment with an online accessories retailer. We found that the addition of a 'cost transparency' graphic denoting the variable costs of producing a wallet significantly increased sales over a two-month period. Using the estimates from a fully-specified model, we calculated that the introduction of the cost transparency infographic increased daily unit sales by 88.1%. The provocative implication of this research is that by revealing costs – typically tightly-guarded secrets – marketers can potentially improve both brand attraction and sales.

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***“Anyway the Wind Blows” Manufacturing Consent: How Refutational Two-sided Messages Steer Ambivalent Attitudes***

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Marketers generally feel inclined to highlight only the favorable features of their products. However, sometimes two-sided messages are used, disclosing not only positive information, but some negative information as well (Golden & Alpert, 1987; Eisend, 2006). The question whether one should provide a one-sided versus two-sided message has received considerable attention in the persuasion literature (e.g., Eisend, 2006; Pechmann, 1992; Rucker et al., 2008), without straight answers. On the one hand, the inclusion of negative information in a message seems to enhance attitudes and intentions (e.g., Crowley & Hoyer, 1994) whereas, on the other hand, attitudes and intentions can be derogated (Eisend, 2006). We argue that attitude ambivalence could account for these mixed results. Past research demonstrates that attitude ambivalence plays an important (negative) role in influencing attitudes and intentions (e.g., Priester & Petty, 1996). When people are confronted with a two-sided message, this may induce feelings of evaluative conflict (cf. attitudinal ambivalence) which may lead to lower attitudes and purchase intentions. However, when a two-sided message does not evoke high levels of ambivalence, we expect positive effects on message efficacy as previously documented in message sidedness literature.

The first objective of this research is to introduce attitude ambivalence (i.e., an attitude that is positive and negative at the same time) as an explanatory factor for prior inconsistent results concerning message efficacy of one-sided versus two-sided messages (study 1). Moreover, we know that ambivalent attitudes are generally more susceptible to persuasion (Nordgren et al., 2006; van Harreveld et al., 2009). Most research focuses predominantly on why these ambivalent attitudes are more susceptible to persuasive influence (e.g., because they are less strong or because they are a source of psychological discomfort which people want to resolve). Instead, our research focuses on refutation as a tool to influence ambivalent attitudes (study 2). We test whether a (positive) refutational statement

in a two-sided message can be an effective tool to uplift attitudes, purchase intentions, and WOM even in situations of high ambivalence. Third, we are planning to test the effect of a refutational statement in a two-sided message in the opposite (negative) direction as well. Hence, can a refutational statement in a two-sided message be an effective way to ‘manufacture consent’ in any direction wanted, when ambivalence is high?

In study 1, 137 undergraduates were randomly assigned to one of four conditions in a 2 (one- vs. two-sided) x 2 (high vs. low ambivalence) between-subjects factorial design. Respondents were told that they would find a set of equally important attributes that described an MP3 player (cf. Priester et al., 2007). For each condition, the characteristics describing our product were randomly selected from the attributes used by Priester et al. (2007). One- versus two-sidedness was manipulated by providing either only positive or both positive and negative features about the product. Low versus high ambivalence was manipulated by varying the amount of positive/negative features. Significant interaction effects were found for attitude towards the MP3-player and purchase intention (cf. message efficacy) whereby clearly similar patterns emerge. As expected, two-sided messages only yield more positive attitudes and intentions when ambivalence is low (vs. high). Hence, when designing two-sided messages, marketers should try to avoid creating ambivalent situations because it seems to offset the positive effects of two-sided messages on message efficacy described in previous literature.

Now, in study 2, we test if a refutational statement in a two-sided message may help to increase message efficacy, even when ambivalence is high. A refutational two-sided message includes a refutational statement in the message itself. The intent is to introduce an opposing view, and subsequently demonstrate why this opposing view is inferior to the view of the communicator (Allen, 1991). A non-refutational two-sided message merely offers both sides of a proposition (i.e., one side advocating the position of the communicator and the other side opposing or countering the communicator’s position), while not refuting the opposing argument(s) in the message itself. A refutation might help to uplift message efficacy again, even in ambivalent people (i.e., when high ambivalence is induced/primed). We investigate whether a positive refutational statement in a two-sided message can be an effective tool to uplift message efficacy even in situations of high ambivalence.

One hundred and six MTurk participants were randomly assigned to one of four conditions in a 2 (two-sided nonrefutational vs. two-sided refutational in the positive direction) x 2 (high vs. low ambivalence) between-participants factorial design. Study 2 was identical to the previous one except for some modifications: (a) only two-sided messages were used, (b) a different product stimulus was used to generalize across products: a notebook, (c) the attributes describing the notebook were pretested on their importance level, and, finally (d) measures of negative and positive WOM were included. The results show significant interaction effects: in case of high (vs. low) ambivalence, positive refutational two-sided messages lead to higher attitudes, purchase intentions, positive WOM, and lower negative WOM (compared to non-refutational two-sided messages). Hence, a positive ‘wind’ may overcome the perverse effects of ambivalence in two-sided messages.

In sum, we show that attitude ambivalence may shed light on previous inconsistent results concerning two-sided messages’ efficacy. That is, two-sided messages only yield more positive attitudes and intentions when ambivalence is low (vs. high). However, this perverse effect of ambivalence in two-sided messages can be resolved by including positive refutation. For future research, we will test whether individuals in an ambivalent condition can be persuaded regardless of the direction of persuasion (i.e., a refutational two-sided message in the positive direction, refuting the contra arguments vs. a refutational two-sided message in the negative direction, refuting the pro arguments). In other words, does it matter for ambivalent individuals whether the positive (pro) or the negative (con) argument in the two-sided message is refuted? Hence, can ambivalent people be persuaded ‘any way the wind blows’?

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## ***The Value of Transparent Marketing Communication: How Proactive Disclosure Affects Consumer Behavior***

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Today's consumers are better educated and more demanding than ever before (Labrecque et al., 2013), with preferences shifting towards healthier, more sustainable products and services (Luchs et al, 2010). The financial crisis has led to increased skepticism towards companies (Kirby, 2012), while social media have made it difficult to control the flow of information available to consumers (Fournier & Avery, 2011). In addition to post-crisis regulations enforcing more disclosure of financial information, brands are increasingly pressured to be transparent towards consumers about topics like product composition, revenue allocation, working conditions, partners and suppliers, etc. (Fournier & Avery, 2011; Kirby 2012). Indeed, surveys show that consumers prominently consider a brand's level of transparency in the decision-making process (Cohn & Wolfe, 2013), which has led companies such as Starbucks to adopt a policy of "hypertransparency", making openness about company policies and business practices a key feature of their marketing communication (Post, 2013). However, the effects of brands' transparency on actual consumer behavior have not been the subject of many marketing studies.

We define brand transparency as the brand's act of making relevant information available, regardless of its valence, rather than a state in which all relevant information is available. Information integration theory (Anderson, 1971) predicts that positive information increases consumers' valuation of a product or service, whereas negative information decreases valuation. However, studies on two-sided advertising (Eisend, 2006) and trivial attributes (Brown & Carpenter, 2000) show that ambiguous or even negative information sometimes positively affects consumer perceptions. We propose that the active disclosure of relevant information as a prominent feature of marketing communication, hence transparency, has a positive effect on consumer behavior, even when the disclosed information is ambiguous or unfavorable. Moreover, we propose that this effect is caused not only by increased trust in the brand (Eisend, 2006), but also by the perception of the disclosed information itself. We test our hypotheses in a series of four studies measuring actual consumer behavior. All stimuli used in experimental manipulations were pretested and selected on the basis of being perceived as ambiguously valenced rather than unambiguously positive or very negative, as well as (equally) moderately relevant rather than pivotal or completely irrelevant in the decision-making process.

In the first (pilot) study, we used a second-price sealed bid auction to measure participants' willingness to pay for a six-pack of coconut juice that was recently introduced on the market. The study was set up as a simple experiment ( $N = 174$ ), in which the brand, in the advertisement used in the auction, either or not disclosed information regarding the relative allocation of total revenues to the coconut farmers (20%). Results of a Tobit regression analysis showed that, despite a pretest found 43.09% to be the average minimal acceptable share, participants were willing to pay significantly more when the brand disclosed the information regarding allocation of revenues ( $M_{disclosure} = \$1.83$ ,  $SD = \$4.20$ ;  $M_{non-disclosure} = \$1.10$ ,  $SD = \$1.28$ ;  $t = 2.00$ ,  $p < .05$ ).

To ensure this effect was not attributable to the mere availability of information, or the specific content of the information or product used in study 1, in study 2 ( $N = 510$ ) we auctioned off a set of smartphone-controlled multicolored LED bulbs. This time, the brand either or not disclosed limitations regarding the color controlling features of the product. In a third condition, the same information was disclosed through a consumer review. The Tobit analysis showed that participants offered more when the information was disclosed by the brand ( $M = \$26.22$ ,  $SD = \$40.97$ ), as compared to through a consumer review ( $M = \$20.06$ ,  $SD = \$30.76$ ,  $t = -2.23$ ,  $p < .05$ ) or not disclosed at all ( $M = \$20.64$ ,  $SD = \$28.20$ ,  $t = -1.60$ ,  $p = .11$ ).

To gain a better understanding of the underlying process, in study 3 ( $N = 212$ ) we investigated the effect of brands' active disclosure of information on the perception of the information. Participants were exposed to a post on the Facebook account of a juice brand containing information regarding either product content or revenue allocation, and were subsequently asked to rate information relevance and positivity, as well as their trust in the brand. Disclosure source was manipulated such that the information was disclosed either by the brand or by a consumer. A MANOVA revealed a significant effect of disclosure source on perceived information relevance and valence ( $V = .04$ ,  $F(2,199) = 4.22$ ,  $p < .05$ ). Follow-up ANOVA's showed that information was perceived both as more relevant ( $M_{brand} = 4.72$ ,  $SD = 1.46$ ;  $M_{consumer} = 4.24$ ,  $SD = 1.64$ ;  $F(1,200) = 4.76$ ,  $p < .05$ ) and positive ( $M_{brand} = 4.26$ ,  $SD = 1.37$ ;  $M_{consumer} = 3.86$ ,  $SD = 1.33$ ;  $F(1,200) = 4.93$ ,  $p < .05$ ) when it was disclosed by the brand.

In a subsequent field experiment ( $N = 85$ ), supermarket shoppers encountered a tasting booth with posters of two different types of juice of the same brand. One poster either or not contained information regarding the nutritional value of the juice, whereas the information on the other poster was kept constant. In a third condition, the same information was disclosed by a research assistant. After carefully examining both posters and answering some (irrelevant) questions about the product packaging, participants were offered to taste one of the two displayed products. A logistic regression analysis showed that participants were more likely to choose the focal juice when information regarding the nutritional value was disclosed by the brand (76.70%), compared to disclosure by the researcher (53.60%,  $B = -1.51$ ,  $p < .05$ ) or no disclosure (59.30%,  $B = -1.06$ ,  $p = .10$ ). A mediation analysis revealed significant indirect effects of disclosure source on product choice through perceived relevance and positivity in the hypothesized direction.

Overall, these results suggest the potential of transparency as a prominent feature of marketing communication. Rather than claiming to provide full understanding of its effects across contexts and types of disclosed information, this study aims to set the ground for more studies on transparency in marketing.

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**BREAK**

**9:30am - 9:45am**

**PLENARY SESSION 1: Elizabeth Loftus, University of California, Irvine**

**9:45am-10:45am**

**Ballroom**

**BREAK**

**10:45am-11:00am**

**SESSION 2**

**11:00am - 12:15pm**

***Symposium: When We Are Together: The Dynamics in Shared Goal Pursuit***

**Chair:** Szu-chi Huang, Stanford University, USA

***Goal Projection in Public Places***

Janet N. Ahn, New York University, USA\*

Gabriele Oettingen, New York University, USA

Imagine that you are driving to an open-air concert and there is bumper to bumper traffic on the highway. Immediately you think, “All these people are going to this concert! I’m never going to get in!” Although the chance that every single one of those cars are headed to the same concert is quite low, people still assume that others have the same goal as they do.

Previous research showed that people automatically project their goals onto fictitious characters under controlled laboratory settings (Kawada, Oettingen, Gollwitzer, and Bargh 2004; Oettingen, Ahn, Gollwitzer, Kappes, and Kawada 2014). The question remains whether goal projection is an ecologically valid phenomenon – whether it can be generalized to different situations, persons, and times. To gain insight into the robustness of this effect, it is thus important to conduct testing outside a laboratory setting to ensure high psychological realism – how the psychological processes triggered in a laboratory experiment parallel to those that occur in everyday life. In addition, research in both goal projection and social projection has focused on target persons who were not physically present (e.g., Kawada et al. 2004; Murray, Holmes, Bellavia, Griffin, and Dolderman 2002; Oettingen et al. 2014), thereby limited in the generalizability of the results. For example, research on the projection of personal preferences (e.g., “I enjoy a race or game more when I bet on it”) mainly relied on self-report and judgments of these preferences compared to other Americans or other peers who were not physically present (Ames 2004a, 2004b; Krueger and Zeiger 1993).

To this end, we conducted a series of field studies in public places, which constitutes a rigorous test since people have more access to individuating information (visual and physical) about target persons. Having visual information about other people in real life can alter beliefs about those others (Hansen and Donoghue 1977; Sherman, Presson, and Chassin 1984), which could hamper goal projection. Accordingly, we observed people engaging in mundane activities in everyday life (e.g., attending a movie theater, commuting on a train, or shopping at a grocery store), identified two moderators of goal projection (goal strength and the perceived similarity of the target), then observed the degree to which participants projected their goals onto target persons who were in close proximity and visually accessible.

In Study 1, 90 movie-goers were recruited at a theater. They indicated the name of the movie they came to watch and their commitment to watch that movie. Then, they indicated the perceived popularity of the movie. We observed that greater commitment to watch the movie predicted greater belief that the movie they want to watch is popular,  $\beta = .28$ ,  $t(87) = 2.16$ ,  $p = .03$ .

In Study 2, 49 commuters were recruited at a popular train station in NYC. Participants named the intended destination and their commitment to reach that destination. Then, the experimenter singled out a target person who was waiting directly next to them and participants indicated how similarly they viewed that person and the likelihood that he/she had the goal of reaching the same intended destination. We observed a marginally significant interaction effect of goal commitment by perceived similarity,  $b = .10$ ,  $t(44) = 1.70$ ,  $p = .09$ . Participants with strong goal commitment were more likely to believe that the target person would go to the same destination the more he/she was perceived to be similar,  $b = .40$ ,  $t(44) = 2.76$ ,  $p < .008$ ; which was not true for participants with weak goal commitment,  $b = .02$ ,  $t(44) = .14$ ,  $p > .89$ .

In the final study, we measured goal strength through goal attainment conditions, and incorporated this factor into the model. Research has shown that goal strength is enhanced for goals that have not been attained versus goals that have been attained (Brunstein and Gollwitzer 1996; Fishbach and Dhar 2005; Wicklund and Gollwitzer 1982). Thus, we recruited 39 shoppers at a local supermarket in New York City. An experimenter approached shoppers who were either entering the market ready to make their purchase (the goal unattained condition) or exiting the market having made their purchase (the goal attained condition).

Participants first named the main item they came to purchase (or just purchased) and indicated their commitment to purchase that item. Then, the experimenter chose a target person as someone who was just about to enter the supermarket and participants indicated how similarly they viewed the person as well as that person's commitment to purchase the same item.

We found a significant three-way interaction between participant's goal commitment, perceived similarity of the target person, and goal attainment condition,  $b = .34$ ,  $t(31) = 4.75$ ,  $p < .001$ . There was a significant two-way interaction of goal commitment and perceived similarity in the goal unattained condition,  $b = .25$ ,  $t(14) = 4.95$ ,  $p < .001$ . Participants who had strong goal commitment were more likely to think that the target person had the goal to purchase the critical item the more similar they perceived that person to be,  $b = .21$ ,  $t(14) = 2.18$ ,  $p = .035$ . The reverse pattern was observed for those who had weak goal commitment—they were less likely to think the target person had the goal to purchase the critical item the more similar they perceived them to be,  $b = -.67$ ,  $t(14) = 4.82$ ,  $p < .001$ . However, there was no interaction between the two variables in the goal attained condition.

The aforementioned three field studies demonstrate converging evidence of the generalizability and ecological validity of goal projection outside of laboratory settings, and they also identify important moderators for the effect: goal strength and perceived similarity of the target person. These findings have important implications for consumers and marketing practitioners alike in terms of the interpersonal consequences of projecting in the real world.

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***From Close to Distant: The Dynamics of Interpersonal Relationships in Shared Goal Pursuit***

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While the majority of research on interpersonal relationships in self-regulation focuses on the influence of socially close others (e.g., Fitzsimons and Finkel 2010; Fitzsimons and Shah 2009), relatively little research has investigated the influence that the people who are pursuing the same individual goals may have on one another – how do people perceive and interact with others sharing the pursuit with them?

This paper examines how people's perceived closeness with others in the same stage of a shared goal pursuit (i.e., pursuing the same individual goal and at approximately the same stage of pursuit) may change during the course of the pursuit. We build our hypotheses on the literature on interpersonal relationships in self-regulation processes (e.g., Fitzsimons and Finkel 2010): When consumers first begin to pursue a goal, they experience considerable uncertainty about the process of the pursuit (Koo and Fishbach 2008) – they are uncertain about how their actions and effort would translate into progress and eventually help them reach the goal. One way to alleviate such uncertainty is to relate to other people who are also pursuing the same goal, leading to greater perceived closeness and willingness to share goal-related information to help each other. However, once people accumulate a significant amount of progress and feel relatively certain about the process of goal progression, they become more focused on their own pursuit. As a result, they grow more distant from shared-pursuit others and are reluctant to share helpful information.



One qualitative dataset from Weight Watchers, one lab experiment, and a weeklong exercise program tested present predictions. Study 1 provides a qualitative field validation in the context of Weight Watchers (51 interviews and 143 meeting observations). We found that for the customers in the initial stage of their weight loss pursuit (achieved  $\leq 50\%$  of their goal weight), 100.0% mentioned thoughts related to companionship and stated that they felt closer to and were more willing to assist fellow Weight Watchers members, compared with 42.1% in the advanced stage of weight loss,  $\chi^2(1, N = 37) = 14.83, p < .01$ . In contrast, 78.9% of the customers in the advanced stage (achieved  $> 50\%$  of their goal weight) expressed feelings of distancing and reluctance to share information with fellow members, compared with only 44.4% in the initial stage,  $\chi^2(1, N = 37) = 4.68, p < .05$ .

Study 2 replicated the patterns observed in Study 1, as well as tested the underlying role of process certainty in the shift of relations. Participants were divided into separate lab rooms, and read about a campus credit card reward program. Participants entered their expenditures on campus thus far and were provided with different progress feedback to manipulate their stage in the reward program (25 points vs. 75 points, out of 100 points required for the reward). We manipulated process certainty by introducing different rules of point accumulation: either a fixed 10% of each dollar spent, or 8-12% depending on the purchase category (a practice often used by credit-card companies). The manipulation check verified that the “percentage by category” reward structure led to a higher feeling of uncertainty than the fixed structure. Participants then wrote down their expenditure plan and had an opportunity to share their tips/tricks with their paired partner who was taking a similar survey in the next room. Consistent with our hypothesis, we found that those in the initial stage of the program shared more tips ( $M = 35.40$  words) than those in the advanced stage ( $M = 7.95$  words),  $\beta = -21.56, t(161) = -8.71, p < .01$ . There was also a Stage in the Pursuit  $\times$  Certainty about the Process interaction,  $\beta = -5.62, t(161) = -2.34, p < .05$ . For those in the initial stage, feeling less certain about the process did not produce additional impact,  $\beta = 3.29, t(161) = 1.05, ns$ ; for those in the advanced stage of the reward program, feeling less certain about the goal process made them share significantly more tips with their partner ( $M = 11.24$  words vs.  $M = 4.81$  words),  $\beta = -7.85, t(161) = -2.19, p < .05$ .

Study 3 further tested the certainty mechanism by framing the shared goal as being motivated by different reasons (adopted from Lamberton et al. 2013). Participants signed up for a 7-day walking program to achieve the goal of 100,000 steps. They wore pedometers to track their progress during the program. We manipulated whether participants were paired with a partner who was participating in the walking program for the same (vs. different) reason, and tracked how their perceived closeness with their paired partner and their information-sharing behaviors evolved during the week. A pre-test confirmed that when participants joined the program for the same (vs. different) reason as their partner, they felt more certain about the process of the pursuit. In the main weeklong study, we replicated the main effect of stage,  $F(2, 84) = 7.53, p < .01$ , such that participants shared less information as they approached the end of the walking program, qualified by a significant Stage in the Pursuit  $\times$  Reason for the Pursuit interaction,  $F(2, 84) = 5.61, p < .01$ . Participants who shared the pursuit with their partner for the same reason started out as friends and became distant and shared less information as they approached the finish line,  $F(1, 21) = 21.02, p < .01$ . In contrast, those sharing the pursuit for a different reason and thus experienced higher process uncertainty showed a significant quadratic trend,  $F(1, 20) = 7.66, p = .01$ : their helping behavior dropped a little during the middle stage, but picked up again as they got near the goal.

These findings add to the literature on interpersonal relationships in self-regulation processes by capturing how consumers actively manage their relationships with others in shared goal pursuit situations; also, they provide insight on the autonomous information-sharing behaviors of consumers and the key drivers behind the effectiveness of shared-pursuit programs (e.g., Weight Watchers, AA).

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## *The Influence of Envy on Individually- versus Socially-Framed Hedonic Goal Pursuit*

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Envy is experienced as a result of a negative social comparison with another individual who is higher on some desired quality, achievement, or possession (Parrott and Smith 1993). Envy is cognitively complex and multifaceted in its experience (Crusius and Mussweiler 2012). Benign envy occurs when a person is envious of another but feels that the advantage of the envied individual is deserved, while malicious envy occurs when it is perceived that the advantage of the envied individual is not deserved (Van de Ven, Zeelenberg, and Pieters 2011). Previous work on the influence of each envy type on goal pursuit has primarily focused on two observations: benign envy leads people to work harder to attain the same advantage held by the envied individual (Van de Ven et al. 2009), whereas malicious envy leads people to wish that the advantage of the envied individual is taken away (Van de Ven et al. 2012). Based on these findings, one might conclude that if an individual is envious of another person's athleticism, benign envy could inspire harder training in the gym to share a similar level of fitness, while malicious envy leads to a wish for the athletic individual to become overweight.

We alternatively suggest that the effect of each envy type on the pursuit of a shared goal is more nuanced and depends on the consideration of other moderating factors. We propose that the envy/goal pursuit relationship is dependent on the type of goal under consideration and the manner in which it is pursued. We argue that both experiences of envy could enhance goal pursuit when the goal is hedonic in nature. This prediction is based on research showing that negative emotions, such as benign and malicious envy, elicit goal-directed behavior intended to make the person feel better (Gross 1998; Tice, Bratslavsky, and Baumeister 2001). One of the ways in which people do this is by pursuing hedonic activities such as having fun and relaxing (Andrade and Cohen 2007; Labroo and Rucker 2010).

However, how benign and malicious envy influences hedonic goal pursuit may depend on whether the hedonic activities are framed as being pursued with others versus pursued alone. We argue that the framing of the hedonic activity is important because each envy experience can influence the connectedness that the individual has with other people. Specifically, we predict that benign envy increases the pursuit of hedonic goals when the activities associated with the goal are socially-pursued. This occurs because benign envy is coupled with a high level of deservingness towards the envied person, which leads the individual to see the good in people and enhances one's social connectedness. In contrast, malicious envy enhances pursuit of hedonic goals when the activities associated with the goal are individually-pursued. This occurs because malicious envy is coupled with a low level of deservingness towards the envied person, which leads the individual to see the bad in people and diminishes one's social connectedness. We tested these predictions across three studies.

Study 1 employed a 3 (emotion: control, benign envy, malicious envy) x 2 (hedonic goal framing: socially-pursued vs. individually-pursued) between-subjects design. The hedonic goal centered on having fun through playing a video game. Participants read about receiving the results of a midterm exam. In the control condition, participants were told they did well. In both envy conditions, participants did poorly on the exam while a classmate did well. However, in the benign envy condition, the classmate's superior grade was a result of hard work while in the malicious envy condition, the superior grade was from cheating. Participants then completed a purportedly unrelated consumer preference task. Participants were asked to rate their interest in playing a video game that was either framed as a multi-player game (socially-pursued) or a single-player game (individually-pursued). In the benign envy condition, participants were significantly more interested in playing the video game when framed as socially-pursued than

individually-pursued. In contrast, malicious envy significantly increased interest when the game was framed as individually- (versus socially-) pursued. The effect of envy type on motivation was mediated by the person's level of social connectedness.

In study 2, we sought additional process evidence for social connectedness being the mechanism behind the effects of envy on hedonic goal pursuit. Specifically, we explored whether enhancing one's social connectedness could offset the effect of malicious envy in terms of reducing socially-pursued hedonic goals. We employed a 2 (emotion: benign envy vs. malicious envy) x 2 (social connectedness: control vs. high) between-subjects design. The hedonic goal centered on relaxing by going on a vacation and was only framed as being socially-pursued. The emotion manipulations were identical to study 1. Social connectedness was manipulated by either having participants look at desktop wallpapers (control) or yearbook photos of fellow classmates (high). Participants then completed a supposedly unrelated task on vacation preferences, where they rated their interest in taking a vacation that was framed as an opportunity to relax and socialize with others. Regardless of social connectedness, the benign envy conditions were equally likely to express interest in the vacation. However, within the malicious envy conditions, participants were significantly more likely to express interest in the vacation in the high social connectedness (versus control) condition.

Study 3 aims to extend the previous results by examining whether the effect of benign envy on enhancing motivation for socially-pursued hedonic goals can be attenuated by decreasing social connectedness. This study also explores whether other negative emotions (e.g., shame) lead to differences in hedonic goal pursuit depending on the framing of the pursuit.

Collectively, this research provides new insight (1) to marketers, where the effectiveness of ads could depend on its framing and consumers' emotions, (2) to consumers, where feeling envious is not always maladaptive and can sometimes foster social bonds, and (3) to researchers, where future work is encouraged to unveil other instances where discrete emotions influence motivation to pursue shared goals depending on framing and/or context.

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### ***Double or Nothing? How Observing Another's Prosocial Goal Pursuit Impacts Motivation to Help***

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Does observing another's prosocial action increase or decrease an individual's motivation to similarly help? Prior literature has suggested that the likelihood an observer follows the example of the actor is substantially affected by their identification with the actor—the extent to which the observer categorizes the actor as part of his or her extended self (Tajfel and Turner 1986). However, the literature has thus far produced mixed results, with some studies finding that observers are more likely to similarly act when they highly identify with the actor (Gino and Galinsky 2012; Goldstein and Cialdini 2007), and others finding that identification decreases the likelihood that the observer engages in a similar behavior (Kouchaki 2011).

By employing a goal-based analysis, the current research examines situations in which individuals contribute to a prosocial goal, and proposes that identification can either increase or decrease the observer's motivation to help depending on how much the actor contributes to the goal, because it determines whether an observer uses the actor's behavior to infer goal commitment or goal progress. When observers have relatively low identification with the actor, they use the observation to infer their own goal commitment, and are therefore more likely to pursue to the extent that the actor pursues the goal. Conversely, when observers have relatively high identification with the actor, they experience vicarious goal fulfillment through the actor's prosocial behavior, and are therefore less

likely to pursue the goal when the actor sufficiently contributes to it, but more likely to pursue it when the actor's contribution is low. Four studies lend support to these predictions by examining the role of identification with a brand, school, nation, and a friend.

In study 1, we tested whether observing a brand's low versus high contributions toward a pro-social goal influences consumers' motivation to contribute to that goal, depending on their identification with the brand. Specifically, participants learned that Samsung had made either low or high contributions to a charity campaign. We separately measured participants' chronic identification with the Samsung brand, and invited them to join the campaign with which Samsung was associated. Consistent with our prediction, we found that the more participants identified with Samsung, the less likely they would be to donate to the campaign when observing Samsung's high contributions, but the more likely they would be to donate to the campaign when observing Samsung's low contributions.

In study 2, we examined the role of group identification by manipulating it, and explored the underlying processes of our effects. Participants were asked to sign a petition for a social cause after they had observed that many (high contribution) versus few people (low contribution) from either their own school (high identification) or a different school (low identification) had participated in the campaign. We then measured their goal commitment, need for progress, and willingness to sign a petition. As predicted, we found that the underlying inferences that an observer makes from the actor's behavior (either commitment or a need for progress) mediate the impact on the observer's motivation to help. Participants in the low-identification condition inferred the level of goal commitment from an actor's pursuit of a prosocial goal, and therefore they felt more committed to the prosocial goal when observing others' high (vs. low) level of contribution to the goal, which in turn increased their own willingness to pursue the goal. Conversely, those in the high-identification condition inferred the need for progress based on the same action, and therefore they experienced vicarious goal pursuit with the actor, as they inferred a more urgent need for progress based on others' low (vs. high) level of contribution to the goal, which in turn increased willingness to contribute.

In study 3, we explored the role of national identification, and tested whether our effects are moderated by whether an observer pursues the same goal as an actor. Specifically, participants observed low or high contributions to a social cause made by either people from their own country (high identification) or another country (low identification). They were then invited to make a donation to the same cause as the actor versus a different one. We replicated the previous results when participants were invited to donate to the same cause as the actor, but not when asked to donate to a different cause.

In study 4, we explored the role of identification in interpersonal relationships, and whether earlier findings extend to situations in which an observer watches an actor decide whether to contribute to a prosocial goal. We predicted that watching an actor's decision to adopt or not adopt the goal would have a similar impact on the observer's motivation as watching the actor's level of contributions to the goal, because goal adoption or rejection itself can be a signal of sufficient or insufficient goal progress (Fishbach and Dhar 2005). We conducted this study at coffee shops, in which an experimenter approached tables occupied by pairs. The experimenter randomly selected one of the two and invited that person to sign a petition for a social cause. After the first person had made a decision of whether to participate, the experimenter subsequently made the same request to the other person. Following that, we also measured each individual's chronic identification level with the other. We found that the more the observer identified with the actor, the less likely he or she would be to sign the petition when the actor had signed, but the more likely they would be to sign when the actor did not.

These findings showed that observing another's pro-social goal action can increase or decrease the observer's likelihood of sharing the pursuit, depending on the observer's identification with the actor, and the actor's contribution to the goal. This work contributes to research on prosocial behavior as being first to systematically examine how others' behaviors influence one's motivation to help, and

also contributes to prior work on social identification and interpersonal influences by identifying when and why identification increases or decreases the observer’s motivation to share the actor’s goal pursuit.

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## ***Symposium: Construction of Risk Preferences***

**Chair:** Joachim Vosgerau, Tilburg University, The Netherlands

### ***Contextual Gambles Bias Odds in Sports Betting Markets***

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We examine historical odds on sporting events in multiple markets and find that the valuations of independent gambles within a reference class are too similar to one another. We argue that these odds reflect an effect of irrelevant context on gambler choice: that the comparison to returns on other similar and salient gambles makes a particular gamble seem more or less appealing.

Consider a simple experiment intended to demonstrate the effect of contextual gambles on gambler choice. We presented participants with two independent sporting events and asked them to place a hypothetical bet on each one. For each event, they chose whether to bet on the “favorite” or bet on the “underdog.” The odds on the second event were fixed across conditions while the odds on the first event varied by experimental condition.

Experimental layout: Condition 1 [Condition 2]

	Favorite	Underdog
Choice 1:	Win \$110 [\$170]	Win \$1,000 [\$250]
Choice 2:	Win \$130	Win \$400

When the returns on the favorite in the first event were lower than the returns on the favorite in the second event, the majority of participants bet on the favorite in the second event. But when we manipulated the odds on the first event, so that its favorite offered higher returns than the favorite in the second event, participants shifted toward the underdog in the second event. We assume that the “favorite” and “underdog” column headers in the experimental materials created two “reference classes” within-which participants judged the appropriate returns for members of the class; \$130 seems like a good return for a favorite when compared to \$110, but a bad return for a favorite when compared to \$170. This result is very similar to the background contrast effect described by Simonson and Tversky (1992).

Sports betting markets are an ideal real-world context in which to document this effect on actual consumer choices. If actual gamblers were influenced by contextual gambles in the way that our experimental participants were, demand for a bet would have been increased when it was presented alongside similar bets offering lower returns, and decreased when it was presented alongside similar bets offering higher returns. In response, bookmakers would have lowered potential returns when presented alongside similar bets offering lower returns, and raised potential returns when presented alongside similar bets offering higher returns, reducing variance

within a reference class, and resulting in a kind of “class compression” in market odds. The actual rates of outcomes provide fundamental values against which to measure a pricing bias, and the dates on which competitions took place allow us to create a proxy for the most likely comparisons.

In addition to experimental demonstrations of the basic effect, we examine two historical datasets of market closing odds: one on 3,597 Mixed Martial Arts (MMA) fights scheduled to take place from June of 2007 to February of 2013, and one on 94,221 European soccer games scheduled to take place from June of 2000 to January of 2013. In the MMA dataset, notational differences between the presentation of favorite and underdog odds suggest those two reference classes. In the Soccer dataset, the layout of the betting card suggests three reference classes: home team, away team, and draw.

Consistent with the bookmaker’s best response to the experimentally observed bias, we find that market odds within a class of outcomes are compressed toward other odds within the same reference class. Incorporating our class compression framework into a simple out-of-sample test of a betting strategy can lead to positive returns approaching 5% per bet placed.

Our estimates are robust to controls for the well-known longshot bias (See Griffith, 1949; Snowberg & Wolfers, 2011). They are also robust to controls for a reference-class-insensitive compression toward the average market odds.

In addition to the primary compression, our causal hypothesis makes a number of secondary predictions. Compression toward bets likely to have been presented to bettors within the same time period should be greater than compression toward a historical class mid-point, and compression toward the odds on past gambles should be greater than compression toward future gambles. We find support for both. Further, compression should be greater when the reference class is clearer. For example, in Soccer, we follow the layout of the betting card to assume win-bet reference classes of Home and Away. But some bettors may instead (or also) be comparing favorites to favorites and away teams to away teams. Because these two comparisons sometimes predict cancelling biases, we should find smaller estimates of compression for these win bets than for bets to draw, where there is only one reasonable reference set: other bets to draw. We find this as well.

The prices that we observe are set by a bookmaker. But we assume that the observed pricing bias reflects a response to a bias in gambler choice, rather than a biased bookmaker himself. We cannot conclusively rule out this alternative. But in the MMA dataset, we observe market opening prices, and find no evidence of compression before bookmakers have a chance to respond to market activity. We can also directly observe compression over the course of the market, mean absolute distance from the assumed reference point falls by over 17% from market open to market close.

We follow up with more laboratory experimentation, showing that the bias on gambler choice can be easily moderated by slight changes to the experimental materials. Two simple changes each halve the effect of the referent: presenting the referent return in different units than the focal return, and employing different syntax to describe the referent gamble than to describe the focal gamble. Concluding, the field data demonstrate how sport market betting odds are biased through class compression. Bookmakers respond to the changing betting volumes, which leads to biased returns in the market place. The laboratory experiments show that the observed odds compression is indeed caused by comparisons within reference classes, as the effect is moderated by changing the format (units and syntax) of the referent gamble.

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## *Value Atrophy in Consumer Assessment of Risky Options*

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Normative theories as well as lay intuition suggest that adding additional negative (positive) prospects (i.e., probabilistic outcomes) should reduce (increase) the overall attractiveness of a risky prospect. For example, a prescription drug with a possible side-effect of a heart attack should be perceived as more threatening if it also poses the possibility of additional side-effects such as headaches and constipation. On the contrary, we propose a “Value Atrophy” effect in risk assessment whereby a negative (positive) prospect can be perceived as less negative (positive) when further negative (positive) prospects are added to it.

We propose that value atrophy occurs because people believe that larger prospects are less likely than smaller prospects. As a result, we predict that the inclusion of smaller prospects by contrast makes a larger prospect appear less likely, and this reduction in the perceived likelihood of the large prospect decreases the perceived value of a risky option.

In Experiment 1, participants perceived a pharmaceutical drug as more negative (i.e., more dangerous) when it had a single side effect of cancer, compared to when it had the same side effect of cancer in addition to several smaller side effects. Consistent with our proposed process, the presence of additional smaller side effects reduced the perceived likelihood of the larger side effect, and this reduction in the perceived likelihood of the larger side effect mediated the value atrophy effect.

Experiment 2 replicated value atrophy in a positive domain, thereby suggesting that the effect is unlikely to be due to motivated processing (in which people might be motivated to underestimate the likelihood of a larger side effect that might be more threatening and anxiety producing). Specifically, participants perceived a lottery drawing to be more attractive when it offered a single large prize compared to when it offered the same large prize in addition to smaller prizes. Consistent with the mediation documented in Experiment 1, the presence of additional smaller prizes reduced the perceived likelihood of the larger prize, which in turn mediated the effect.

Our explanation for value atrophy hinges on the hypothesis that people believe that larger prospects are less likely than smaller prospects. In Experiment 3A, we tested this hypothesis. Specifically, participants indicated that they were more likely to experience a smaller prospect than a larger prospect in a variety of scenarios in both positive and negative domains (e.g., participants believed that they were more likely to find a \$1 bill than a \$100 bill on the ground, and more likely to sustain small rather than large damage from an earthquake). Providing convergent evidence for this belief, Experiment 3B similarly found that participants believed that both themselves and others would be more likely to obtain a small rather than a large prize from a lottery.

Because our theoretical framework suggests that value atrophy is in part driven by a contrast between smaller and larger prospects, we predict that value atrophy should only occur if a risky option contains a prospect that is relatively larger than the other prospects contained in it. Experiment 4 provides further support for our proposed theoretical account by testing this prediction. Participants viewed a pharmaceutical drug that either had a single minor side effect, multiple minor side effects, a single severe side effect, or the same severe side effects plus minor side effects. Value atrophy only occurred in the last two conditions when the magnitude of one prospect was larger than the other prospects.

If shifts in perceived probabilities underlie value atrophy, then the effect should not occur in contexts where there is no uncertainty regarding the likelihood of the prospects. In Experiment 5 we tested this prediction by manipulating whether the prospects were probabilistic or non-probabilistic. In the probabilistic context we told participants that they were choosing between two lotteries

whereas in the non-probabilistic context we told them that they had earned additional compensation and were choosing between two certain compensation packages. We found value atrophy in the former context but not the latter. Specifically, we found that people chose a lottery offering a single large prospect over a lottery offering an equivalent large prospect plus a chance to win additional smaller prospects. However, we did not find this choice pattern in the compensation context.

The results are not only consistent with our proposed process, but also rule out several alternative possibilities. Specifically, value atrophy is unlikely to be driven by increased cognitive load or by decreased salience of the larger prospect. If increased load or decreased salience of the large prospect drove the effect, we would expect addition of prospects to produce value atrophy regardless of the prospects' magnitude and/or probability. In contrast, we find that value atrophy occurs only in probabilistic options, and only when smaller prospects are included with a larger prospect. The effect also cannot be explained by an average value computation account whereby the overall value of a risky outcome is computed by averaging the magnitude of the prospects contained in it. This explanation is unlikely since the atrophy effect emerges only in probabilistic contexts and not in certain contexts where the perceived likelihoods of the prospects cannot shift.

Besides being theoretically interesting, the findings also have significant practical implications for marketers as well as policy makers since consumers evaluate the risks and benefits associated with their choices on almost a daily basis. Our research explains when bundling smaller prospects with larger ones may help or hurt marketing efforts. Our research also has important implications for public policy. For example, consider FDA requirements to disclose all of a medical drug's potential risks. Current findings suggest that disclosing minor side effects may ironically make a drug appear less risky. Thus, this research has direct consequences for the design of advertisements, promotions and policy.

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#### ***When and Why Do Consumers Devalue Risky Prospects?***

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In 2006, Gneezy, List, and Wu discovered a perplexing phenomenon they called the “uncertainty effect” (UE): people valued lotteries less than their worst possible outcomes. In particular, participants were asked to report their willingness-to-pay (WTP) for either: (1) a \$50 Barnes & Noble (B&N) gift certificate, or (2) a lottery ticket that would for sure provide them with a reward of a \$50 B&N gift certificate or a \$100 B&N gift certificate with equal probability. Participants were WTP around \$38 on average for the \$50 gift certificate, but surprisingly, they were only WTP around \$28 for the lottery between the \$50 and the \$100 gift certificates. This effect held in both hypothetical and real-stakes scenarios, with other goods (e.g., a field experiment with baseball trading cards) and notably, using other elicitation methods (i.e., choice between the prospect and \$25 in cash).

Why does the UE occur? Although Gneezy et al. (2006) hypothesized that the effect is due to risk aversion, a plethora of other explanations have been tested and ruled out, such as: (1) disappointment aversion (Newman & Mochon, 2012), (2) joint evaluations in the lottery versus separate evaluations in the certain conditions (Simonsohn, 2009), and (3) misunderstanding of instructions (Simonsohn, 2009; Rydval et al., 2009; Keren & Willemsen, 2009). Therefore, despite numerous alternative explanations that have been proposed for the UE, without clear-cut opposing evidence, the default explanation is that of “direct risk aversion” (coined by Simonsohn [2009]). Specifically, people simply dislike uncertainty which leads them to devalue risky prospects.



Seemingly contrary to this explanation, Yang, Vosgerau, and Loewenstein (2013) found that when the uncertain prospects were framed as uncertain gift cards, people were WTP just as much for the uncertain prospect as the lowest possible outcome. Furthermore, they found that this framing influenced WTP but not willingness-to-accept (WTA). Yang et al. (2013) proposed that the UE was explained by an aversion to bad deals, which led buyers to be more sensitive to cues of risk (e.g., lottery rather than gift card) than sellers. Though this explanation is not entirely incompatible with the direct risk aversion explanation, it provides another explanation as to why the UE may occur.

In several studies, we provided more direct tests of both the direct risk aversion and the bad deal aversion accounts of the UE. To test the direct risk aversion account, Studies 1A, 1B, and 2 examined how uncertainty influenced expected enjoyment. To test the bad deal aversion account, Study 3 examined whether eliminating the bad deal aspect of a risky prospect would also eliminate the UE.

**Study 1A.** 201 undergraduates watched trailers for two upcoming movies and ranked them. After being randomly assigned to one of two conditions: Certain (told which movie they would watch) or Uncertain (not yet told which movie they would watch), participants rated their expected enjoyment of the movie.

Inconsistent with the UE, Uncertain participants expected to enjoy the movie ( $M=4.83$ ,  $SD=1.29$ ) as much as those who were told that they would watch the movie they ranked higher ( $M=5.18$ ,  $SD=1.32$ ;  $t(154)=1.61$ ;  $p=.11$ ), and significantly more than those who were told that they would be watching the movie they ranked lower ( $M=3.78$ ,  $SD=1.54$ ;  $t(144)=4.30$ ,  $p<.001$ ).

**Study 1B.** Using a similar procedure as Study 1A, Study 1B replicated the UE with WTP using these stimuli ( $N=156$ ).

**Study 2.** 303 MTurk participants completed an online study using a 3 (Certainty: Certain – Match vs. Certain – Mismatch vs. Uncertain) x 2 (DV: Enjoy vs. WTP) between-subjects design. After watching trailers for two movies and ranking them, participants were randomly assigned to one of three certainty conditions: Certain - Match (asked about movie they liked), Certain – Mismatch (asked about movie they did not like), or Uncertain (asked about a lottery between the two). Participants either reported their expected enjoyment or WTP.

Replicating Study 1A, Uncertain participants expected to enjoy the movie ( $M=5.78$ ,  $SD=1.15$ ) just as much as Certain – Match participants ( $M=5.79$ ,  $SD=1.14$ ,  $t(105)=-.05$ ,  $p=.96$ , and significantly more than Certain – Mismatch participants ( $M=3.74$ ,  $SD=1.68$ ;  $t(92)=6.95$ ,  $p<.001$  and  $t(97)=7.22$ ,  $p<.001$ , respectively).

Replicating the UE, Uncertain participants were WTP less ( $M=\$2.25$ ,  $SD=\$2.10$ ) than Certain – Mismatch participants ( $M=\$5.48$ ,  $SD=\$2.98$ ;  $t(107)=6.26$ ,  $p<.001$ ).

**Study 3.** 203 MTurk participants completed an online study using a 2 (Certainty: Certain vs. Uncertain) x 2 (Refundable: Non-Refundable vs. Refundable) between-subjects design. The Non-Refundable conditions were the same as those of the original UE. The Refundable conditions stated that there was a 30-day return policy; for the Uncertain Refundable condition, the return policy allowed the consumer to return the lottery ticket *even after* finding out the outcome. This should considerably reduce the worry of paying for a bad deal. Participants first stated their WTP for the prospect, then they rated how worried they were about the prospect being a bad deal on a 7-point Likert scale (1 = Not At All, 7 = Extremely).

For ratings of bad deal, there was a significant interaction effect,  $F(1, 199)=6.65$ ,  $p=.01$ . There was no effect of refundability for the Certain conditions; however, there was an effect for the Uncertain conditions: the lottery was deemed less of a bad deal when it was refundable ( $M=2.59$ ,  $SD=1.56$ ) than when it was not ( $M=3.84$ ,  $SD=2.08$ ).

For WTP, there was only a main effect of Certainty, such that participants in the Uncertain condition were WTP significantly less ( $M=\$40.80$ ,  $SD=\$10.35$ ) than participants in the Certain condition ( $M=\$29.33$ ,  $SD=\$21.77$ ),  $F(1, 199)=22.8$ ,  $p<.001$ . Even when the lottery was less of a bad deal, people were not WTP as much as the worst possible outcome.

Across several studies, we tested two different accounts of the UE. Studies 1A, 1B, and 2 demonstrated that though people are less WTP for risky prospects, they expect to enjoy the same risky prospects, which provides evidence that consumers may not dislike uncertainty. Study 3 found that even when uncertain prospects are not “bad deals,” people still exhibit the UE. Taken together, these studies suggest that another explanation for the UE is needed. We offer some alternative accounts based on our studies.

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### ***Malleability of Revealed Risk Preferences***

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All theories of decision making under risk presume (revealed) risk preferences to be stable such that for identical risky prospects, people are either risk seeking or risk averse. Classical expected utility models, for example, assume general risk aversion expressed by the diminishing marginal utility of wealth (Rabin 2000). In prospect theory, a four-fold pattern of risk seeking/aversion emerges from the interplay of the subjective value and probability weighting functions (Tversky & Wakker 1995). In the perceived relative argument model (PRAM) by Loomes (2010), risk preferences are determined by the comparison of risky prospects’ outcome and probability ratios.

Weber, Blais, and Betz (2002), however, suggest that people can be risk seeking in one domain (e.g., finance) and risk averse in another (e.g., social). We argue that risk preferences—like preferences for riskless prospects—are to a large extent constructed (cf., Ariely, Loewenstein, & Prelec 2006; Loewenstein et al. 2001), and may thus be inconsistent even within the same domain. In six experiments with hypothetical and real gambles, we show that people ask to be paid (WTA) *and at the same time* are willing to pay (WTP) to play the same gamble. All six experiments involved gambles with a 60% chance of winning \$X, and a 40% chance of losing \$X. Both the stake X in the gamble and whether WTA or WTP were elicited was manipulated between- and within-subjects.

In Experiment 1 (N = 308, MTurk), participants indicated their WTA or WTP for two hypothetical gambles, where X = \$10 (small stake) or X = \$100 (large stake; WTA/WTP and stakes were manipulated btw-sbj.). For both small and large stake gambles, over 85% of participants asked to be paid (i.e., indicated a WTA > \$0), and over 68 % were willing to pay (i.e., indicated a WTP > \$0) to play the gambles. Thus, participants were more risk-averse in the WTA conditions (over 85% indicated WTA > \$0) than in the WTP conditions (only 32% indicated WTP = \$0; all  $p < .001$ ), indicating that risk-preferences differed across WTA/WTP conditions. Such risk preference reversals were observed for both small and large stake gambles. Experiment 2 (N = 149, MTurk, hypothetical) replicated these findings with stakes manipulated within-participants.

Since the WTA/WTP measures are truncated at \$0 (i.e., any amount greater than \$0 is interpreted as evidence for a risk preference change), our results may not necessarily indicate true risk preference reversals but represent a demand effect or stem from participants’ misunderstanding of the scales/instructions. We tested this possibility by a) manipulating WTA/WTP within-participants,

b) playing gambles for real, and c) setting the WTA/WTP default to \$0 and reminding participants that they can set their WTA/WTP to \$0.

In experiment 3 (N = 485, MTurk, hypothetical), we manipulated WTA/WTP within-participants, thereby exposing participants to opposing experimental demands. Each participant indicated her WTA for the low stake and her WTP for the high stake gamble (same gambles as in experiment 1) or vice versa (order was counterbalanced). Again, the majority of participants asked to be paid (> 85%) and was willing to pay (> 70%) to play the gambles, demonstrating more risk-aversion in the WTA (over 85% indicated WTA > \$0) than the WTP conditions (only 30% indicated WTP = \$0; all  $p$ 's < .001). Furthermore, WTA and WTP correlated positively ( $r = .49$ ,  $p < .001$ ), the more participants asked to be paid to take on risk, the more they were also willing to pay to take on risk. Note that if risk preferences were based on a stable underlying construct, WTA and WTP should have correlated negatively.

In experiment 4 (N = 101) and 5 (N = 53), WTA/WTP (btw-sbj.) were elicited with the Becker, De Groot, and Marschak (1964) incentive-compatible procedure, and gambles were played out for real. In experiment 4, X = \$0.10 or X = \$1.00 (btw-sbj.), in experiment 5 X = \$7. In both experiments (and in all stake conditions), risk preferences reversed, participants were more risk averse in the WTA (over 85% set their WTA > \$0) than the WTP conditions (max 50% set their WTP = \$0; all  $p$ 's < .01).

Experiment 6 tested a boundary condition for the observed risk preference reversals. In the WTA conditions, WTA can be used to hedge against a potential loss. At the extreme of setting WTA = X (the stake in the gamble) the decision maker is completely insured against the possibility of losing X. As a consequence, WTA should increase proportionally to increases in X. The opposite holds for the WTP conditions, the higher WTP the more a decision maker hedges against a potential win, at the extreme setting WTP = X which 'insures' the decision maker completely against the possibility of winning X. Hence, as X increases WTP will not increase proportionally but quickly reach a maximum. To test this, in experiment 6 (N = 425, MTurk, hypothetical) WTA/WTP was manipulated between-subjects. To make sure participants understood that they can enter any amount including \$0, participants were presented with a scale ranging from \$0 to \$1000, with the scale pointer positioned at \$0 by default. In addition, participants were reminded that they could indicate \$0. The stake X was manipulated within-subjects at three levels: \$10 vs. \$100 vs \$1000. Significant risk preference changes were again observed across the WTA/WTP conditions for all three levels of X (all  $p < .001$ ). WTA increased almost linearly in X (X = \$10, *Median*<sub>WTA</sub> = \$10; X = \$100, *Median*<sub>WTA</sub> = \$100; X = \$1000, *Median*<sub>WTA</sub> = \$709; nonparametric  $p < .001$ ), whereas WTP increased much less in X (X = \$10, *Median*<sub>WTP</sub> = \$2; X = \$100, *Median*<sub>WTP</sub> = \$9; X = \$1000, *Median*<sub>WTP</sub> = \$14; nonparametric  $p < .001$ ). The results suggest that assessing consumers' WTA/WTP does not make losses/gains or winning/losing probabilities more salient, or trigger avoidance/approach motivation. Rather, the WTA/WTP manipulation appears to truly change revealed risk preferences, risk-averse consumers become risk-seeking.

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## ***Individual Papers: Risky Business: Risk and Uncertainty***

### ***The Tangibility Bias***

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An accurate understanding of financial risks is essential for people's financial well-being and the health of the global economy. The

subprime mortgage crisis of 2008 is a recent example of the dangers of misunderstanding risks. The mortgagors' underestimation of the risks they were taking contributed to massive defaults, foreclosures, bank failures, and a global economic crisis. We define financial risk simply as the possibility of losing money.

Buying a home, investing in gold, stocks, and mutual funds are the most popular ways of holding wealth in the U.S. These assets differ in how tangible they are. In our research, tangible things are things that have physical presence. People can see, feel or even touch a tangible asset like a home or gold but stocks and mutual funds are comparatively intangible. In our research, we show that tangibility provides a false sense of financial safety, which consistently and predictably leads to biased risk judgments.

We investigated the effect of tangibility on perceived risk for three asset classes: gold, homes, and stocks. In all of these cases, people's intuitions about the connection between tangibility and low risk had no rational basis and sometimes those intuitions went against a rational analysis of risk. A phenomenon we call the tangibility bias.

According to our account, as people construct their intuitions about the possibility of a loss, they are affected by the feeling of stability and permanence associated with tangibility.

In Experiment 1, participants were randomly assigned to one of two conditions. We held financial risk constant across both conditions by using two investments whose values are always the same. In one condition (tangible condition), participants rated the financial risk of investing \$100,000 in physical gold; in the other condition (intangible condition), they rated the financial risk of investing \$100,000 in a financial security that tracks gold prices. Next, all of the participants rated how tangible their investment option felt.

Despite equivalent levels of risk, participants perceived gold bars to be less risky than a security that tracks gold prices. Perceived tangibility statistically mediated the relationship between asset type and perceived risk.

Experiment 2 generalized the findings of Experiment 1 to another asset class: homes. Participants were randomly assigned to one of two conditions. In one condition (tangible condition), they rated the financial risk of buying a \$100,000 home; in the other condition (intangible condition), they rated the financial risk of investing \$100,000 in a diversified home-like financial security. We explained that the security tracked national home prices and paid monthly dividends that track the average home rent.

As we anticipated, participants perceived a home to be less risky than a home-like security. Perceived tangibility statistically mediated the relationship between asset type and perceived risk.

In Experiment 2, since the home-like security tracks the U.S. averages, it is a perfectly diversified investment; and therefore, less risky than buying a single home. Yet, it feels less tangible and is rated as more risky. Experiment 3 generalized our findings to stocks. In addition, in Experiment 3, we manipulated tangibility without changing the asset type. This eliminated the possibility that the difference in perceived risk was driven by aversion to or attraction toward certain asset types.

In Experiment 3, we manipulated the tangibility of stocks by means of fabricated company names. Half of the names referred to tangible things, the other half referred to intangible things.

As we anticipated, participants rated the stocks with tangible names as less risky than the stocks with intangible names.

Experiment 4 replicated this result with company logos. Thus, tangibility cues from different sources produce a similar effect.

Experiment 4 had a design similar to Experiment 3. This time, we manipulated the tangibility of stocks by means of fabricated company logos. Half of the logos depicted tangible objects; the other half did not.

As we anticipated, participants rated the stocks with tangible logos as less risky than the stocks with intangible logos.

Experiment 5 showed that tangibility affects choices even when money is at stake. Experiment 5 additionally demonstrated that people look for tangibility specifically when their objective is financial safety. This provides evidence for a specific tangibility-financial safety link, and eliminates the possibility that tangibility is selected in general by means of, perhaps, positive affect.

In Experiment 5, participants were randomly assigned to one of two conditions. In both conditions, participants' task was to build a portfolio of stocks by selecting four stocks from the list of stock logos that we used in Experiment 4. In one condition, participants read that they would receive a bonus payment if, in a week, their portfolio performs better than the average of the whole list of stocks. This is similar to how portfolio managers are generally incentivized: rewards for returns better than the market. In the second condition, participants were told that they would receive a bonus payment if the value of their portfolio a week from today is not lower than its value today. This incentive scheme was consistent with a financial safety objective as it encourages minimizing the possibility of a loss.

As we anticipated, participants in the safe-portfolio condition included in their portfolio more tangible logos than participants in the well-performing-portfolio condition did.

There are important implications of the tangibility bias documented in this research. Most of people's wealth is tied to their homes. Homes happen to be tangible and financially very risky. We propose an easy-to-understand mandatory risk labeling for homes. The risk ratings could be modeled after credit rating agencies' letter grade system, e.g., AAA, AA, A, BBB, BB, etc., with higher grades corresponding to lower risk. Historical home-price data could be used to calculate risk ratings at the zip code level and a government agency such as Consumer Financial Protection Bureau could oversee the implementation.

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***I feel safer already: Self-disclosure increases as nearness in proximity becomes salient***

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Disclosure is an important consumption behavior because people are often asked to provide information about themselves to marketers, particularly in online settings. In this research, we find that increased salience of physical proximity leads to increased perceptions of interpersonal closeness due to a conceptual metaphor between these two concepts, which impacts consumers' likelihood of self-disclosing. Additionally, we find that the perception of security mediates the relationship between perceived interpersonal closeness and disclosure.

Research in cognitive linguistics has found that people employ a wide range of conceptual metaphors between tangible stimuli and abstract phenomena (Lakoff & Johnson, 1980; Landau, Meier, & Keefer, 2010). This stream of research suggests that these metaphors are used to more easily understand and express ideas that are typically experienced internally (Lakoff & Johnson, 1980; Landau et al., 2010). For example, backward/forward for past/future (Miles, Nind, & Macrae, 2010). The relationship between distance cues and disclosure is important because people tend to seek closeness with others (Baumeister & Leary, 1995). An important consequence of

interpersonal closeness is increased self-disclosure (Altman & Taylor, 1973). Because self-disclosure can be perceived as risky, people are only likely to do so when they feel interpersonal closeness with another or when they feel secure disclosing such information (Laurenceau, Barrett, & Pietromonaco, 1998)

Literature examining similarities in representation of spatial and physical distances also delves into what factors promote safety. In general, people tend to be drawn more toward people that are more similar to themselves (Byrne, 1971; Miller, Downs, & Prentice, 1998). Additionally, the more comfortable people are, the nearer the physical distance people maintain from each other (Hayduk, 1983). Prior research also suggests that people also tend to physically distance themselves from feared others (Macrae, Bodenhausen, Milne, & Jetten, 1994; Mooney, Cohn, & Swift, 1992; Williams & Bargh, 2008; Worthington, 1974). Across three experimental studies, we propose and test a model that increased salience of physical proximity activates concepts related to close interpersonal relationships and safety, thus increasing disclosures.

In study 1a, participants completed a sentence scrambling task to make distance salient. Participants were then asked whether or not they have performed a series of actions adapted from John, Acquisiti, and Loewenstein (2011). Examples of the questions included: “Have you ever stolen something from the grocery store?” Our dependent measure was the number of questions answered affirmatively (i.e., the affirmative admission rate, or AAR). Participants who completed the near distance prime self-disclosed more ( $M=4.51$  AAR,  $SD=2.28$ ) than those who completed the far distance prime ( $M=3.55$ ,  $SD=2.35$ ),  $t(92)=1.99$ ,  $p<.05$ ,  $d=.41$ ).

In study 1b, we found that salience of physical proximity led to an enhanced perception of the depth of interpersonal relationships. Participants completed the same distance manipulation as in study 1 followed by the Relationship Closeness Inventory (Berscheid, Snyder, and Omoto 1989). Participants who completed the close distance prime reported greater relationship closeness ( $M=2.77$ ,  $SD=1.54$ ) than participants who completed the far distance prime ( $M=1.98$ ,  $SD=1.11$ ) ( $t(62)=2.37$ ,  $p<.03$ ,  $d=.59$ ).

In study 2, we tested the mechanism of perceived security for our effects. This study employed a between subjects design where distance (near vs. far) was manipulated and perceived security and disclosure were measured. Participants were exposed to ads from a fictitious travel agency indicating that a vacation destination was nearer (more remote). Those in the near (far) distance prime condition read an advertisement from the agency entitled “Puerto Rico, (closer than you think/a remote getaway).” Next, participants completed the disclosure measure, which they could skip or provide their home address to the travel agency. Lastly, we measured perceived security of disclosing information to the travel agency.

Participants in the near distance condition were more likely to disclose their address (67%) than those in the far distance condition (54%,  $\chi^2(1)=3.77$ ,  $p=.052$ ). Participants in the near distance condition also indicated they felt more secure in disclosing to the travel agency ( $M=4.09$ ,  $SD=1.95$ ) than those in the far distance condition ( $M=3.64$ ,  $SD=1.86$ ;  $t(223)=1.79$ ,  $p=.075$ ,  $d=.23$ ). In addition, a bootstrapping analysis with 10,000 estimates (Preacher & Hayes, 2004) indicated that feelings of security mediated the relationship between perceived distance and disclosure ( $boot=-.23$ ,  $SE=.14$ , 90% CI:  $-.47$  to  $-.02$ ).

Study 3 explores how the salience of ingroup (vs. outgroup) members impacts disclosure. This study employed a 2 (distance prime: near/far) x 3 (group: ingroup/less threatening outgroup/more threatening outgroup) between-subjects design. Participants completed the same sentence scramble distance manipulation used in the previous studies. Next, participants were assigned to write about either a day in the life of the average person who completes studies on MTurk (ingroup), a day in the life of an average homeless person (less threatening outgroup), or a day in the life of an average Iranian person (more threatening outgroup). Lastly, participants were given the chance to self-disclose information in the same task as study 1.

The results of study 3 indicate the distance prime x ingroup/outgroup target interaction ( $F(2,161)=6.16, p<.01$ ). Contrast analysis revealed that among participants for whom an ingroup member was salient, those primed with near distances disclosed more sensitive information ( $M=5.16$  AAR,  $SD=2.43$ ) than those primed with far distances ( $M=3.50$  AAR,  $SD=2.18, t(59)=2.81, p<.01, d=.72$ ). In comparison, among participants for whom the more threatening outgroup was salient, those primed with far distances disclosed more ( $M=5.20$  AAR,  $SD=2.90$ ) than those primed with near distances ( $M=3.57$  AAR,  $SD=2.45, t(41)=2.08, p=.05, d=.61$ ). There was no difference in disclosure rates for participants who considered a less threatening outgroup ( $M_{near}=4.06$  AAR,  $SD=2.02; M_{far}=4.27$  AAR,  $SD=2.57, t(61)<1, d=.09$ ).

In conclusion, our research provides important insights into how and why people self-disclose. Environmental cues might cause someone to self-disclose more than they would perhaps like to or ought to do. Similarly, there are situations in which it is critical that consumers give accurate but sensitive information to physicians or public health workers, such as matters related to substance abuse or sexual health. Our findings indicate that perhaps positioning oneself nearer to the discloser or having subtle environmental cues (such as signs in a clinic) related to proximity could facilitate accurate disclosure of this important information.

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### ***Physically-Attractive Males Increase Men's Financial Risk-Taking***

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People have evolved to solve adaptive problems arisen throughout evolutionary history. One problem is mating, where people have a motivation to increase their reproductive success (Griskevicius et al., 2007; Maner et al., 2005). In the domain of risk, disgust leads women to make risk-averse choices in order to avoid exposure to contagion that is harmful to offspring, while anger leads men to make risk-seeking choices in order to be more aggressive against mating rivals (Fessler & Navarrete, 2003; Fessler, Pillsworth, & Flamson, 2004; van Vugt, De Cremer, & Janssen, 2007; Wilson & Daly, 1985). Moreover, men are generally more risk-taking than women (Baker & Maner, 2008; Byrnes, Miller, & Schaffer, 1999; Wilson & Daly, 1985), but they are particularly more so in mating-relevant contexts (Baker & Maner, 2008).

To account for the sexual dimorphism across species, Charles Darwin (1859) introduced the concept of *intrasexual competition*, where members of one sex compete with each other in order to attract the opposite sex and increase their reproductive success. The victor gains preferential access to mating resources such as the opposite sex, while losers die because they fail to mate. Both sexes have favored and sought out features that increase their reproductive success (Buss, 1989; Li et al., 2002). Crucially, intrasexual competition is usually greater between men than between women. Women typically carry one offspring at a time, while men are limited in their reproductive success only by the number of women that they impregnate (Trivers, 1972; Wilson & Daly, 1985; Wilson et al., 1996). This sex difference has meant that the number of reproductively-capable men is vastly greater than that of reproductively-capable women, such that women generally have a greater choice of men as a mating partner (Griskevicius et al., 2012; Li et al., 2002). Thus, it is more important for men than women to appear desirable to the opposite sex as a mating partner in order to increase their reproductive success.

One feature that women desire in men is physical attractiveness (Frederick & Haselton, 2007; Gangestad & Thornhill, 1998; Penton-Voak & Perrett, 2000; Penton-Voak et al., 1999). Thus, when the average man sees an attractive male, he likely feels less attractive and sees himself as less desirable to women, at least physically. Compensatory theories in psychology suggest that this feeling of inferiority should motivate him to increase his mating desirability in other ways (Bäckman & Dixon, 1992; Salthouse,

1995). One way is to increase his financial resources, such as by accruing money and taking advantage of risky but lucrative financial opportunities (Furnham, 1984). Indeed, money frees people from budget constraints and allows them to choose and act according to their desires and interests (Vohs, Mead, & Goode, 2006; Zhou, Vohs, & Baumeister, 2009). Indeed, having money means that one's children can have the best chance at growing up with all of the best opportunities and that one does not have to worry about putting food on the table. Of course, money did not always exist in its current form, but men with financial resources have always signaled to women their wealth, ambition, and social status – all of which are desirable traits to the opposite sex.

In sum, this research hypothesizes that men who see attractive males take greater financial risks. Three experiments support the research hypothesis. Experiment 1 finds support for the overall effects that men who see attractive males take greater financial risks than those who see less attractive males. In Experiment 2, mediational results provide evidence for the underlying mechanism. Men take greater financial risks in the presence of attractive males because they perceive themselves as less desirable as a mating partner to women – but only when they lack financial resources. One way to accrue money is to take financial risks, such that the indirect effect of men who see attractive males on greater financial risk-taking was mediated through a perceived lack of financial resources.

Finally, Experiment 3 demonstrates that the effects occur due to a mating motive, which suggests that intrasexual competition plays a role in that men see attractive males as intrasexual competitors in attracting women as a mating partner, which prompts them to accrue money by taking financial risks. However, the effects attenuate when men had a self-protection motive, which primed men to focus on protecting themselves from harms and dangers.

There is literature more broadly in social psychology, such as in social comparison theory and idealized images, that lead to similar predictions (Leit, Gray, & Pope, 2002; Myers & Biocca, 1992). However, they explain *how* an upward social comparison to attractive males, for example, might increase men's financial risk-taking, but they do not explain *why* men would do so. Evolutionary psychology offers the best cause for such upward comparisons. Of course, this research did not examine social comparisons *per se*, but intrasexual competition explains them as well as main dependent variable of financial risk-taking. Both Experiments 2 and 3 converge on the conclusion that men who see attractive males are motivated to increase their mating desirability to the opposite sex. These findings offer a prescriptive explanation based on evolutionary processes that goes above and beyond a descriptive one.

Nonetheless, this research focuses on same-sex imagery amidst a dearth of research on same-sex imagery through the lens of evolution, because prior work focused largely on opposite-sex imagery, and so does not explain how a wider array of sexual imagery impacts people. Because heterosexual individuals are not aroused by other same-sex individuals, the foregone conclusion may have been that same-sex imagery has little or no meaningful impact. This research shows that this is not true for financial risk-taking. Thus, it is important to understand how same-sex imagery impacts people as such imagery is as commonplace today as opposite-sex imagery. This research advances this understanding by focusing on men and financial risk-taking in particular, and so it sets the stage for future research on how same-sex imagery impacts people's decision-making more broadly.

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### ***Motivating Discounts: Price-Motivated Reasoning***

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Why might the effects of large discounts be different than those of small discounts? Probably the most ubiquitous form of promotion, discounts allow sellers to increase sales in accordance with a downward sloping demand curve. Large discounts, however, may also signal that something is wrong (i.e., low quality). Researchers have indeed found mixed effects of large discounts on consumers' propensity to buy (Davis, Inman, & McAlister 1992). We propose that a well known psychological process – motivated reasoning – may justify the existence of both types of effects, and help explain when would each be more likely.

The relation between price and product perception is well known to marketers and is far more complex than a simple downward sloping demand curve, resting in part on consumers' subjective beliefs about the true value of the discount (Anderson & Simester 2001; Davis, Inman, & McAlister 1992; Neslin & Shoemaker 1989). Several factors influence these beliefs, including the true quality of the product, brand and seller reputations (Blattberg & Wisniewski 1989; van Heerde, Leeflang, & Wittink 2004), semantics of the advertisement (Leclerc & Little 1997), and consumer expertise in the product category (Alba & Hutchinson 1987). Moreover, a low price or a large discount may signal low quality (Bagwell & Riordan 1991; Wolinsky 1983; Milgrom & Roberts 1986; but see Gerstner 1985). In the current work we highlight an important psychological process that is often overlooked in such pricing analyses – the idea that inference making based on cues and signals may be a biased process. In particular, the description of price and quality inferences offered above fails to account for the effects of a person's *desire*, well-founded or not, to own a product. Prior research implies a distinct causal path: consumers are aware of an advertised discount and interpret it idiosyncratically (a step which involves making implicit or explicit attributions for the offer); their interpretations influence perceptions of the product, which in turn inform purchase decisions. We hypothesize that in certain circumstances, the causal direction may be reversed—an *a priori* attraction to the product may influence perceptions of product quality, including attributions for its being offered at discount—a process of motivated reasoning.

Across five experiments we find an interaction between the size of the discount and a-priori appeal (and proxies for it). We also find this effect mediated by the posterior product appeal, as well as by the attributions made to explain the large discount. These results supported our contention that larger discounts triggered controlled, motivated reasoning in some participants. Those who were tempted to buy seemed to ask, in essence, “*Can I justify this purchase?*” and to look for reasons to answer “yes.”

In Experiment 1, larger discounts produced more positive perceptions of an attractive desk lamp, which in turn partially mediated the reported likelihood of purchase. These results replicated in Experiment 2, but only for participants thought to have some inherent attraction to the product independent of price. These participants, more so than others, judged the product to be useful, high-quality, and aesthetically pleasing. They also reasoned that the purpose of the discount was benign (e.g., to promote a new vendor) rather than damning (to move an inferior product off the shelf). For those to whom the product was irrelevant, in contrast, steep discounts appeared to reflect poorly on the product. These results supported our contention that larger discounts triggered controlled, motivated reasoning in some participants. Experiment 3 confirmed that the rosy product evaluations that emerged from this motivated reasoning process led to more actual purchases. The large discount indeed increased demand for gender congruent DVDs relative to a smaller discount, but not so when the movies were gender-incongruent: large discounts led to no more purchases than small discounts absent positive *a priori* attitudes.

Motivated reasoning depends in part on sufficient ambiguity to allow consumers to distort information to support preferred outcomes. Experiment 4 demonstrated the roles of *a priori* attitude, motivation, and product category uncertainty on the willingness to recommend a product to a friend. Current Apple owners reacted more favorably to a large discount compared to non-Apple users, but this effect nearly disappeared for experts.

Experiment 5 demonstrated the roles of uncertainty established in the form of the reason that led to the discount, and consumers' objective and subjective expertise. When the reason for the discount was associated with the product's quality (not enough consumers are buying it), consumers are left with little room and motivation to interpret the quality of one attribute as more important than the other, and thus we find the effect of discount nearly disappeared. The effect was found when the reason for the discount was not indicative on the product quality (operational error). Consistent with our uncertainty hypothesis, we also find the effect of discount on the adjustments of attributes importance was weaker for objectively knowledgeable individuals and stronger for objectively unknowledgeable individuals.

These results further our understanding of consumer response to prices on several fronts. First, when a discounted product is attractive independent of price, consumers may favorably construe the product attributes and the discount to justify a purchase. In contrast to lay theories, we observed that steeper discounts only intensified the effect. This was not true when the product was unattractive independent of price. Here, larger discounts failed to produce positive evaluations and greater purchases.

Second, our results shed light on the beliefs consumers may hold when considering price promotions. To the extent that the product is tempting and the discount appealing, consumers may adopt positive beliefs regarding the purpose of the promotion. Conversely, if the product itself is not appealing, consumers may be more skeptical about the reasons for the promotion. Finally, we suggest any inference, attribution, or signaling process relies on the existence of uncertainty. In order to meaningfully discuss beliefs and attribution processes there has to exist some level of uncertainty about the product; otherwise the consumer knows for sure the value of the product, and draws no additional information from price signals.

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## ***Individual Papers: # Social Media***

### ***140 Characters or Less: How Fluency Impacts User Engagement in Social Media***

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Social media is now part of the daily lives of billions of people around the world. Consumers are exposed to social media content in the form of status updates, posts, and tweets. They engage with this content in various ways including "liking it," commenting on it, and sharing it with others.

An increasingly popular form of social media involves short messages (tweets) about a particular topic or event. Often these messages are very short (e.g., on Twitter, tweets cannot exceed 140 characters). The need to communicate concisely has led to the extensive use of acronyms (e.g., LOL, "laugh out loud") and symbols (e.g., hashtags # and emoticons such as smiley faces). Despite the ubiquity of linguistic shortcuts in social media content (e.g., tweets), little is understood about how such shortcuts impact consumer interactions and engagement with social media content. In particular, while potentially allowing more information to be communicated, the presence of these shortcuts may reduce content fluency, which in turn might reduce user engagement. Understanding this process is the focus of the current research.

We hypothesize that the fluency of social media content influences user engagement with that content. Engagement is important since it is often a requirement for content to diffuse in social media platforms such as Facebook and Twitter. Fluency is the subjective experience of ease or difficulty with which we are able to process information (Oppenheimer, 2008). Fluency also comes in many different forms. Fluency includes ease of comprehensibility (Lee & Aaker, 2004), ease of processing (Alter & Oppenheimer, 2008), perceived familiarity (Lee & Labroo, 2004; White, Macdonnell & Dahl, 2011), as well as pronounceability (Alter & Oppenheimer, 2008). Fluency has been shown to impact human perceptions and behavior in a wide range of fields. For instance, fluent statements are perceived to be more true, more likeable and to come from a more intelligent source than disfluent statements (McGlone & Tofiqbakhsh, 2000; Reber & Schwarz, 1999; Bornstein & D'Agostino, 1992; Zajonc, 1968; Oppenheimer, 2006; Oppenheimer, 2008). Although fluency has been applied to many domains, to our knowledge it has not been used to explain how people process and subsequently engage with social media content. In the current research, which focuses on content in Twitter, we use fluency to help explain why some tweets receive more attention than others.

In the current research, we draw from research on fluency to suggest that a tweet with higher perceived fluency will receive more attention from other users (i.e. be “retweeted” or “favorited”) than an otherwise comparable tweet with lower perceived fluency. We examine three types of fluency: comprehension, ease of processing, and pronounceability. Additionally, we identify characteristics that affect content fluency. Specifically, we suggest that characteristics such as the number of hashtags or the use of emoticons such as smiley faces help explain levels of perceived fluency.

To test our ideas we conducted a field study involving thousands of tweets about five popular television shows that are discussed frequently in social media (*American Horror Story*, *Breaking Bad*, *Glee*, *Scandal*, and *The Walking Dead*). These shows were selected because they are some of the “most tweeted about” shows (Nielsen 2014). We randomly selected thirty tweets for each show and coded their characteristics, including the number of characters in the tweet (tweet length), the number of hashtags in the tweet (#), the number of mentions of other Twitter accounts (@), number of exclamation points (!), and number of emoticons in the tweet (smiles and frowns). For each tweet, we measured user engagement as the number of times each tweet was favorited and retweeted by Twitter users. Finally, each tweet in the sample was rated by 14 independent judges on Amazon’s Mechanical Turk on three dimensions of fluency: How easy the tweet was to process, comprehend, and pronounce (measured on 1-7 scales). Each judge evaluated five tweets for a given show. Judge’s evaluations were averaged to form single scores on each fluency dimension. In addition, judges indicated how familiar they were with the TV show on a three-question scale and completed a 10-item quiz designed to measure their Twitter expertise (e.g., their ability to identify commonly used acronyms on Twitter such as RT or ICYMI). Our analysis was based on 420 judges’ ratings of 30 tweets.

We found that tweets that are perceived as easier to process and comprehend received significantly more “favorites” than tweets that were less fluent ( $p$ 's = .0023 and .0001 respectively). Tweets that are easier to comprehend also received a significantly higher number of retweets than less fluent tweets ( $p$  = .03). Pronounce-ability did not have a significant influence on the number of retweets or favorites ( $p$  = .56). In addition to examining how fluency affects engagement, we examined how content and individual characteristics affect perceived fluency. We found that fluency was reduced with an increase in the number of hashtags ( $b$  = -.59,  $t$  = -7.18,  $p$  < .0001) and smileys ( $b$  = -1.6,  $t$  = -3.14,  $p$  = .0017) but increased for readers who were more familiar with the TV show ( $b$  = .42,  $t$  = 3.93,  $p$  < .0001) and more expert in Twitter acronyms ( $b$  = .19,  $t$  = 5.20,  $p$  < .0001).

Findings from this field study show that the fluency of social media content affects consumer engagement with this content. Thus, fluency may be an important factor in understanding content popularity and social contagion processes in social media. In subsequent studies we plan to replicate these findings in a controlled experiment by directly manipulating tweet fluency. In addition to manipulating the fluency of a tweet, we will examine how consumer expertise with Twitter and their familiarity with the focal product in a tweet (e.g., TV show) moderate the effects of fluency on engagement.

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***'Who Knows What' vs. 'Who Knows Who': Strategic Content Seeking in Social Media***

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The ubiquity of social media has enhanced consumers' ability to save and access information about others at will. Easy digital access to others can change the way consumers seek and remember information. For instance, when individuals believe that information will be accessible online anytime, they demonstrate lower rates of recall (the "Google effect"; Sparrow, Liu, and Wegner 2011). Likewise, as social media linkage allows us to receive auto-updates and easily contact connected people, we do not need to check and grasp detailed information about them but may look it up whenever we want. Therefore, it is possible that in social network linkage, users pay less attention to information and in turn, decrease their active content-seeking behavior.

This pattern may be moderated by the type of information sought, the goals behind social media usage and also by the presence/absence of network connections. Using a professional social network context, we examine content-seeking by considering two types of information about a peer – professional content (i.e., 'who-knows-what') and social connections (i.e., 'who-knows-who'). Further, we examine content-seeking in the presence (vs. absence) of network connections between a user and his/her focal peer.

We posit that there are two kinds of social media roles – content-generation and content-diffusion - which lead to different goals and varying levels of interest in others' profiles and/or connections. Users in the content-generator role focus on creating new content (e.g., 'Lead-users' in Kratzer and Lettl 2009) while users in the content-diffuser role generate connections and share existing content (e.g., 'Opinion-leaders' in Kratzer and Lettl 2009). Because of their different foci, we expect that prior to making social connections, content-generators may focus on and in turn, show greater recall of other users' expertise/knowledge content while content-diffusers are likely to focus on and show greater recall of other users' social connections. In contrast, after connecting with the focal other, content-diffusers may shift their attention to the person's professional details and/or knowledge in order to find content that can be shared with others. Thus, post-connection, diffusers may show greater recall for 'who-knows-what' content while generators' recall is diminished (since this information is now easily accessible anytime on account of establishing the network connection).

Experiment 1 tests our conjecture in the context of LinkedIn - platform designed for sharing both knowledge/skills as well as network information. All participants were initially exposed to a software application and social network role was primed: "You are picked among 5% of lead users (opinion leaders) from the target consumers of the application based on knowledge and creativity (active social networking)." Participants were asked to provide their ideas on 'how to make the app successful'. To manipulate linkage status, they were presented a screen which read "You are (are NOT) currently linked with the professional" before viewing the focal peer's profile screen which contained profile (skills, knowledge) as well as connection ("connected to"... ) information. Subsequently, after an unrelated filler task, participants were asked to recall the (a) professional content ('who-knows-what'), and (b) social connection information ('who-knows-who') presented on the profile page earlier.

As expected, results revealed significant interactions on both the 'who-knows-what' ( $F(1, 98) = 14.32, p < .001$ ) and 'who-knows-who' recall measures ( $F(1, 98) = 7.81, p < .01$ ). Supporting our conjecture, we find that content-generators showed greater recall of 'who-knows-what' when not linked ( $M_{\text{Generator-Link}} = 1.12, M_{\text{Generator-Unlink}} = 2.08; t(46) = 2.71, p < .01$ ) while content-diffusers showed greater recall when linked ( $M_{\text{Diffuser-Link}} = 2.05, M_{\text{Diffuser-Unlink}} = 1.28; t(50) = 2.16, p < .04$ ).

Further, we also find that content-diffusers showed greater recall of ‘who-knows-who’ when not linked ( $MDiffuser-Link = .82$ ,  $MDiffuser-Unlink = 1.87$ ;  $t(50) = 6.51$ ,  $p < .02$ ) while content-generators showed no significant differences ( $MGenerator-Link = .99$ ,  $MGenerator-Unlink = .75$ ;  $t(46) = .56$ ,  $p > .5$ ). These results demonstrate how social media role interacts with physical information accessibility to shape selective information encoding and retrieval.

Since selective attention plays a significant role in content-seeking behavior we further examined how individual differences in goal-directed attention control influences this process. Prior research suggests that working memory capacity (WMC) reflects differences in the ability of the central executive to logically and strategically direct and maintain attention (Barrett, Tugade, and Engle 2004; Engle 2002). Thus, if selective content-seeking is a “strategic” intentional process, the content-seeking pattern may manifest in those with high WMC rather than those with low WMC.

Across experiment 2-3, we examine the moderating effect of WMC on content-seeking. The overall procedure of experiment 2 was similar to experiment 1 with the addition of the WMC measure (OSPAN: Turner and Engle 1989) at the end of the study. Results reveal that the interaction patterns observed in experiment 1 replicate with high WMC individuals – across both ‘who-knows-what’ ( $\beta = -.35$ ,  $t(138) = -3.49$ ,  $p < .01$ ) and ‘who-knows-who’ ( $\beta = .18$ ,  $t(138) = 1.88$ ,  $p = .06$ ) measures – but mitigate for those with low WMC ( $ps > .7$ ). In experiment 3, we verify the changing patterns of an individual’s recall before and after linkage by using a within-subjects experimental design. Again, the patterns found in the preceding experiments replicated with high WMC for both ‘who-knows-what’ ( $\beta = -.61$ ,  $t(50) = -2.02$ ,  $p < .05$ ) and ‘who-knows-who’ ( $\beta = .79$ ,  $t(50) = 2.09$ ,  $p < .05$ ) measures but mitigated for those with low WMC ( $ps > .2$ ). Further, the patterns observed for the “unlinked” conditions in experiment 1 and 2 replicated before-linkage while the pattern for the “linked” conditions replicated post-linkage.

This research contributes to emerging consumer research on social media by studying content-seeking (as opposed to content transmission/giving). Extant consumer-side literature on social media has largely focused on outward flow of information (Berger and Schwartz 2011; Chevalier and Mayzlin 2006). We add to this stream by examining the other side of the picture. This research also highlights potential downsides to social media connectivity. We show that physical information accessibility (via social media “connections”) may actually reduce some users’ content learning. Finally, we are first to examine the role of individual cognitive characteristics (WMC) in the strategic content-seeking phenomenon.

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### ***An Audience of One: Behaviorally Targeted Ads as Inferred Social Labels***

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“Behavioral targeting” is an Internet-based advertising strategy that uses a consumer’s online actions to tailor digital ads for that person. This research seeks to examine the psychological processes underlying consumers’ responses to this increasingly common practice.

People act according to the traits they presumably possess and perceive themselves to have certain qualities as a result of observing their own behavior (Bem 1967). This tendency to learn about the self by evaluating the implications of one’s behavior can be externally reinforced through “social labeling.” Labeling entails classifying individuals in the hope that they will act consistently with

that characterization (Tybout and Yalch 1980). We propose that behaviorally-targeted ads can act like a social label, reinforcing the implications of past actions and changing consumers' self-perceptions because they believe the targeting algorithm's conclusion that they are the type of person who would enjoy the product.

We predict that these self-perception changes depend on the extent to which consumers like behaviorally targeted ads. As with other forms of persuasive communication, advertisements may be evaluated based on who is delivering the message and how that source is perceived (Chaiken 1980; McGuire 1978). Liked sources are seen as more credible and result in more compliant behavioral responses (Crano 1970) and persuasion (Pornpitakpan 2004). Thus, liking for behaviorally targeted ads will affect whether self-perceptions and behavior are consistent with the implications of the ad. Specifically, we test the following hypotheses across three studies:

- H1:** Behaviorally targeted advertisements can act as inferred social labels, resulting in behavior consistent with the label.
- H2:** Changes in consumer behaviors in response to behaviorally targeted ads are mediated by changes in self-perceptions.
- H3:** The effect proposed in hypothesis 1 depends on the extent to which consumers like behaviorally targeted advertisements.

Study 1 was designed to test whether behaviorally targeted ads function as inferred social labels that can affect behavior. Within a 2 (Ad identified as behaviorally targeted) x Liking for behaviorally-targeted ads (LBTA—a continuous measure mean-centered) between-subjects design, respondents completed a grocery shopping task and were told that they would view an advertisement. Half were told that this ad was “targeted” from the shopping task, while the other half were not. An advertisement for a gourmet grocery store was then presented, after which participants indicated “yes” or “no” to whether they would like to sign up for the store email list. Participants were more likely to sign up (i.e., to say “yes”) in the behaviorally targeted than in the non-targeted condition. Consistent with hypothesis 3, there was a significant interactive effect of targeting and LBTA on willingness to sign-up for the email list such that, in the targeted condition, those who like behaviorally targeted ads in general were significantly more likely to sign-up than those who disliked behaviorally targeted ads; LBTA had no effect in the non-targeted condition. Thus, study 1 offers preliminary evidence in support of both hypotheses 1 and 3.

In study 2 we examined whether receiving a behaviorally targeted ad for a “green” product changes consumers' perceptions of their own environmental values and their donation behavior for an environmental charity using a 2 (Advertised product: environmentally-friendly vs. control) x 2 (Ad identified as behaviorally-targeted: yes vs. no) x LBTA between-subjects design. Procedures were similar to Study 1, except that the advertised product was positioned as environmentally-friendly or not and self-perceptions were measured by the Green Consumption Values scale (Haws, Winterich, and Naylor 2014). Upon completion of the study, participants were automatically entered into a lottery to receive \$10 and were asked if they would like to donate any potential winnings to an environmental charity. Results showed that consumers believed themselves to be more environmentally-conscious when they were aware that the ad has been targeted and when they liked targeted ads. In turn, consumers' revised self-perceptions mediated the conceptually related behavior of donating money to an environmental cause. Study 2 therefore provides evidence that the changes in behavior observed after exposure to behaviorally targeted ads are driven by a shift in people's self-perceptions of the trait implied by the advertisement, consistent with hypothesis 2.

Study 3 replicated and generalized prior results using behavioral targeting from online browsing (vs. past purchases) and using the industry standard AdChoices icon, and tested the hypothesis that a change in self-perceptions leads to increased purchase likelihood for the advertised offering using a 2 (Advertised restaurant: sophisticated vs. unsophisticated) x 2 (Ad identified as targeted: yes vs. no) x LBTA between-subjects design. Participants put together a trip itinerary online and spent some time browsing the Internet. All

participants were then shown an advertisement that was identified as targeted or not and which featured a restaurant positioned as sophisticated or unsophisticated. Participants reported their own enjoyment of upscale dining and indicated purchase likelihood for a Groupon for the advertised restaurant. Results showed a similar pattern of self-perception changes and that this self-learning mediated purchase intentions for the Groupon. These results support our theory and document an important boundary condition: consumers only accept inferred social labels from behaviorally targeted ads when the label they can infer from the ad is a positive (vs. negative) one.

This research demonstrates that behaviorally targeted ads act as *inferred social labels*, changing consumers' self-perceptions and behavior to be consistent with the label. In doing so, we make two major theoretical contributions. First, this research provides an early investigation into how consumers respond to behaviorally targeted advertisements, thus contributing to the growing literature on consumer response to digital marketing tactics (Hoffman and Novak 2011; Naylor, Lamberton, and West 2012; Stephen and Galak 2012; Tucker 2014). Second, our work contributes to the literature on social labeling (Allen 1982; Kraut 1973; Miller, Brickman, and Bolen 1975; Tybout and Yalch 1980) by demonstrating that (1) receiving a behaviorally targeted ad can cause consumers to infer that the marketer has labeled them as a particular type of consumer and (2) these inferred social labels can affect self-perceptions and behavior, consistent with self-perception theory (Bem 1967). These findings have implications for a variety of consumer domains.

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### ***The Facebook Mindset Effect: Incidental Exposure to Facebook Reduces Consumers' Self-Focus and Promotes Conservative Product Choices***

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This research extends the scope of prior work on consumers' path-to-purchase and demonstrates how incidental exposure to one channel *prior* to a choice task affects both consumer self-perceptions and choice in a subsequent channel. Specifically, based on a large-scale field study and subsequent experiments examining the underlying psychological process, this research shows that exposure to the online social network Facebook prior to a choice task draws consumers' attention toward others and away from oneself. We show that this shift in consumer self-focus carries over to a subsequent choice task and attenuates consumer preference for unique product configurations and causes more conservative product choices, which has important implications for both consumers (larger choice regret) and companies (lower sales).

The conceptual background of the current research is built around recent work on pre-shopping factors in consumers' path-to-purchase (Shankar et al. 2011; Verhoef et al. 2007), and the consequences of social network use on consumer preference and choice (Wilcox and Stephen 2013). A prominent finding in the latter stream of research is that the online social network Facebook has a strong influence on (and to some extent amplifies pre-existing) self-presentation motives while inducing a strong other-focus (Back et al. 2010; Zywicka and Danowski 2008). However, this shift in consumers' perspective toward others rather than oneself may have subsequent consequences on consumer preference formation and choice. For example, Goukens et al. (2009) have shown that more self-aware consumers relied heavily on their personal preferences, which had downstream consequences on subsequent consumer choices in that larger self-awareness led to a diminished selection of compromise options and a lower inclination for more varied choice sets. Similarly to Duval and Wicklund's (1972) classic work on self-awareness theory, lower self- and higher other-awareness can also increase sensitivity of others' evaluation (Zimbardo and Leippe 1991), and as a consequence, may decrease consumer

preference for more unique product options.

Building on these streams of research, the key proposition of the current research is that exposure to the online social network Facebook induces a perspective shift from the self toward others. We propose that this perspective shift carries over toward subsequent choice tasks, causing a decrease of consumer preference for more unique product options and ultimately more conservative consumer choices.

To test this proposition, we collected data from a large European car manufacturer and examined the differential role of incidental Facebook exposure to customers' actual purchase in a subsequent car configuration context. We collected data over a time-span of 16 months and merged two distinct sources of data: we combined actual car configurations of the manufacturers' ordering system with on-site tracking data that measured the previous websites from which prospective car buyers entered the car configuration interface. Predicting the number of configured car features (per hour) based on the percentage of Facebook referrers (per hour), we find that as the percentage of Facebook referrers increased, the number of configured car features decreased significantly ( $\beta = -1030.27$ ,  $t(4227) = 2.01$ ,  $p < .05$ ), in line with our proposition. This finding is robust even when testing nested models with a variety of control variables such as hour, weekday, and their interactions.

To provide a more rigorous test that avoids the self-selection issues associated with the field data and the difficulty of drawing inferences at the individual level, we conducted an experiment with 76 prospective car buyers. Prospective car buyers were randomly assigned to either a Facebook or control condition. Participants in the Facebook condition were invited to browse their Facebook profile for five minutes whereas participants in the control condition completed a filler task. Next, both groups were measured on their current state of self-focus and their preference for unique product options, before both groups configured a car for themselves. In line with our proposition and the results of the field study, Facebook exposure led to a significant decrease of the number of chosen add-on features ( $M_{\text{Facebook}} = 9.7$ ,  $M_{\text{Control}} = 12.5$ ,  $t(75) = 2.01$ ,  $p < .05$ ), and a serial mediation model with bootstrapped estimates revealed that this effect is fully mediated by a decrease in consumer self-focus, and a decrease of consumers' preference for unique product options ( $\beta_{\text{IndirectEffect}} = -1.01$ ,  $t(66) = 1.11$ ,  $p > .27$ ).

Study 3, using a 2 (Facebook vs. control) x 2 (self- vs. other-focus) between subjects design ( $N = 230$ ;  $M_{\text{Age}} = 33.3$ ), examined and showed that inducing consumer self-focus experimentally (by using an essay-writing procedure) attenuates the negative effect of Facebook exposure on both consumer preference for unique product options and the number of selected add-on features, revealing the predicted Facebook x self-focus interaction ( $F(1, 226) = 5.04$ ,  $p < .05$ ).

Study 4 generalized the previous effects toward a binary choice context (choice between a high vs. low feature-rich alpine backpack) and used a more subtle self-focus priming technique using a preference learning task ( $N = 180$ ;  $M_{\text{Age}} = 32$ ). Again, and in line with our prediction and replicating the previous results, the preference learning task effectively attenuated the negative of Facebook exposure on consumer self-focus, consumer preference for unique product options, and the choice of more feature-rich alpine backpacks.

To put these findings into perspective, the current research and its findings establish a link between, and extend recent work in, three previously distinct streams of research: first, this work contributes to the recent call for a more holistic understanding of consumers' path-to-purchase in shopper marketing research, and demonstrates how incidental exposure to a preceding channel alters consumer perceptions and ultimate choice in a subsequent channel. Thus, the current work contributes to the shopper marketing literature by extending the scope toward the role of contextual factors and the underlying psychological mechanism driving those effects. Second, the current work also contributes to the emerging research on social network use and its implications for consumer motives and behavior. However, the perspective of this research asked the question and provided answers on how social network use may carry over toward seemingly unrelated consumption decisions of consumers and the products they choose in response. Finally, we



contribute to recent work on product customization by demonstrating the psychological mechanism that drives more conservative, less feature-rich product configurations which have not, to the best of the authors' knowledge, investigated previously.

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## ***Individual Papers: Making Healthy Decisions: Consumer Health and Nutrition***

### ***Motivated Ignorance: The Hedonic Cost of Nutritional Information***

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Prior research has suggested that disclosure of nutritional information is only effective in reducing obesity when consumers are motivated to seek out and process such information (Howlett et al., 2009). Since consumers generally believe that unhealthy items taste better (Raghunathan, Naylor, & Hoyer, 2006), there may be a substantial hedonic cost when objective nutritional facts are known to the consumer. Research has shown that consumers are sometimes willfully ignorant of easily obtainable product attributes when these attributes conflict with goals and generate negative emotions (Ehrich and Irwin 2005). Due to heightened conflict with hedonic goals, we propose and examine across four studies that individuals low in eating self-control will be motivated to ignore available nutritional information for indulgent foods, and doing so will heighten their enjoyment.

Study 1 introduced 128 participants (54% female) to a product evaluation task involving relatively healthy Baked Ruffles potato chips or relatively unhealthy Doritos, depending on condition. The packaging for the chips was shown on-screen including the nutrition facts panel. Participants were asked to carefully review the packaging and time spent doing so was recorded. Next, we captured an individual difference measure of eating self-control (ESC) by adapting Tangney et al.'s (2004) scale items to be eating-specific. The interaction between the condition and ESC was significant in predicting the time spent reviewing the packaging ( $F(1,123) = 11.23, p < .01$ ). A spotlight analysis at 1 SD above and below the ESC mean revealed that individuals lower in ESC spent less time for unhealthy Doritos ( $\beta = -24.29, p < .001$ ) versus healthier baked chips. High ESC participants spent more time looking at food packaging when the chips were unhealthy ( $\beta = 5.44, p < .001$ ) relative to low ESC.

In study 2, 251 participants (61% female) were instructed to evaluate a smoothie food product. The healthiness of the smoothie was manipulated by revealing that it contained either 30% less or 30% more fat than similar smoothies. Next, participants had the option to view 16 pieces of information about the smoothie in two columns: health attributes and other attributes. Once they finished viewing all of the information they desired, participants indicated how much of the smoothie they intended to consume. ESC and demographic information was again collected. Our analysis revealed a significant interaction of healthiness condition and ESC in predicting the number of health attributes viewed ( $F(1,247) = 7.14, p < .01$ ) and intended consumption ( $F(1,246) = 7.33, p < .01$ ). Individuals lower in ESC clicked on fewer pieces of health information when the smoothie was originally framed as unhealthy ( $\beta = -.71, p < .04$ ) versus healthy and stated an intention to consume more ( $\beta = .60, p < .02$ ). Compared to people with low ESC in the unhealthy condition, those higher in ESC clicked on more pieces of health information ( $\beta = .50, p < .01$ ) and had lower consumption intentions ( $\beta = -.32, p < .01$ ).

We next investigated whether the nature of the food consumption occasion would influence enjoyment in study 3. Participants ( $n=192$ ) were asked to imagine that they were out to dinner with friends, and half of participants were told they were celebrating their birthday. Next, they were asked if they preferred to view a dessert menu with nutritional information or one without. The only menu

difference was the calorie count for each of the eight items on the menu. We then asked participants to rate the enjoyment they would expect in consuming the dessert chosen. Across both conditions, participants lower in ESC were more likely to choose the dessert menu without calorie information present ( $\beta = -.37, p < .01$ ). More importantly, there was a significant 3-way interaction between occasion (special or ordinary), menu format (calories or no calories), and ESC in predicting enjoyment ( $\beta = .44, p < .05$ ). We observed that people lower in ESC experienced lower enjoyment when calorie information was present vs. (not present) for special occasions ( $\beta = -.73, p < .04$ ).

In study 4, we further examined the effects of motivated ignorance on downstream enjoyment. Specifically, 204 participants were assigned to view an image of either a very small or very large portion of chocolate cake. Participants next chose to view or skip viewing nutritional information for the cake. Those who chose “view” were shown, depending on assigned condition, that the small (large) indulgence contained 120 (960) calories and 4 (52) grams of fat. Regardless of whether they chose to view or skip, participants next imagined eating a bite of cake and rated enjoyment on a 9-point scale. In a logistic regression, we found that lower levels of self-control corresponded to a greater likelihood of skipping the nutritional information across conditions ( $\beta = .58, p < .0001$ ). Importantly, we found a significant three-way interaction among the size condition, information choice, and self-control ( $F(1,196) = -1.04, p < .02$ ). A spotlight analysis at 1 SD above and below the ESC mean showed that individuals lower in ESC who chose to view nutritional information experienced less enjoyment when the indulgence was large ( $\beta = -1.56, p < .04$ ) versus small (and less fattening). High ESC participants did not show differential enjoyment between conditions ( $p = .73$ ).

Across four studies, our research revealed that individuals lower in self-control tend to avoid available nutritional information for indulgent foods. We measured this motivated ignorance through time spent looking at packaging, number of healthy attributes accessed, and explicit choices to view or not view nutrition facts. Consistently, those with low ESC avoid such information relative to high ESC. Further, we find that people with low ESC intend to consume more unhealthy food (study 2) and enjoy unhealthy food more (less) when avoiding (viewing) nutritional information (studies 3 and 4). Despite the availability of nutritional facts, no positive effect can be realized if those low in ESC willfully avoid information provided.

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### ***Motivated Hypochondriacs: Disease Labels Shape Health Perceptions***

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This research looks at how disease labels might fundamentally alter health perceptions. We propose that disease labels, much like categories, lack precise and discrete membership boundaries: for a stimulus (i.e., a constellation of somatic and affective sensations at a certain point in time) to be assigned to a category (i.e., a certain illness), not all features (i.e., symptoms) need be present. In other words, symptom matching, much like feature matching, should be a flexible process of interpretation rather than exact matching. This results in a certain degree of latitude when attending to, remembering, and attributing somatic and affective states, giving rise to biases in symptom reporting and thereby affecting health perceptions. Furthermore, such disease labeling effect is susceptible to self-serving biases, whereby inaccuracies in risk estimates reflect the interaction of categorization-based errors with defensive mechanisms.

In a series of four studies, we show the following: (a) Disease labels alter symptom reporting and bias health risk estimates; (b) The direction of this bias reflects a self-protection motive: a label signaling (or interpreted as signaling) a mild ailment leads to greater symptom reporting and higher risk estimates compared to a label signaling (or interpreted as signaling) a severe ailment; (c) Reducing

defensiveness eliminates this bias; (d) Perceived disease threat partially mediates the effect; (e) Disease labels do not affect risk estimates made for the general population (i.e., base-rates) or for individuals matched for age and gender (further corroborating the motivational nature of the bias); and (f) This bias holds when controlling for incidental affect, well-being, life satisfaction, and general health perceptions.

In Study 1, participants were handed a survey ostensibly assessing the wellness of the university community. Although all versions of the survey described the same medical condition, the disease was labeled as Seasonality, Mild Seasonality, Severe Seasonality, or was not labeled. Participants were asked to report (a) if in the previous month they had experienced any symptoms of the disease, and if so which ones, (b) how intensely they had experienced these symptoms, and (c) risk estimates (i.e., likelihood of self-diagnosis and likelihood of contraction) for self and for another person matched for age and gender. As expected, the presence (vs. absence) of a label was associated with higher symptom reporting, higher perceived symptom intensity, and greater risk estimates. Perceived disease severity moderated the effect: symptom reporting, symptom intensity, and risk estimates were higher if the label signaled (or was interpreted as signaling) a mild (vs. severe) ailment (as measured by perceived severity ratings). Finally, labels affected risk estimates for the self but not for others. These effects held when controlling for several factors including incidental affect, well-being, life satisfaction, and general health perceptions.

In Study 2 and 3 we sought to better understand the phenomenon and identify boundary conditions. We hypothesized that the biasing effect of disease labels on health perception is due to defensive motives. If so, the effect should disappear when defensiveness is reduced, either because the person affirms alternative self-resources (Study 2), or because one's sense of perceived control is temporarily shaken (Study 3).

Building on self-affirmation theory (Steele, 1988) and on the role of self-affirmation in reducing perceived invulnerability to health risks (e.g., Sherman, Nelson and Steele 2000), in Study 2 participants were first either allowed to affirm themselves in an important domain or they were not allowed to do so. Participants were then handed a survey on the wellness of the university community containing a description of a medical condition that was either labeled or not labeled. To measure risk estimates, participants rated the likelihood they, as well as an average person of their same age and gender, would contract the disease. As predicted, defensiveness moderated the effect of labels on risk estimates, with the direction of the bias determined by participants' perception of disease severity. When participants did not engage in self-affirmation, risk estimates were biased by the presence of a label. However, when participants' defensiveness was reduced (because they engaged in self-affirmation), risk estimates were no longer biased by the presence of a label. Neither self-affirmation nor label affected risk estimates for another person, further corroborating the notion that the phenomenon reflects a self-protection bias.

Study 3 builds on research showing how high perceived control is associated with greater defensiveness and perceptions of invulnerability to negative events (e.g., DeJoy 1989; Harris 1996; Hoorens and Buunk 1993). We reasoned that we could reduce defensiveness and eliminate the biasing effect of labels by inducing perceptions of *low* control. Participants were first asked to recall and vividly describe an instance in which they felt they had high (vs. low) control, and then handed the same health survey used in Study 2, which contained the label (vs. no label) manipulation and the critical measures of risk. As expected, risk estimates of low-control participants were not biased by the presence of a label, presumably because the induction of low control tempered defensiveness; risk estimates were instead biased by the presence of a label when participants recalled an instance of high perceived control. The direction of the bias was once again determined by participants' perception of disease severity, and the effect did not apply to risk estimates for others.

Study 4 brings together the previous three studies to gain a better understanding of the process behind the phenomenon. We first manipulated the factor self-affirmation as in Study 2, and then manipulated the factor label (present, absent). The wellness survey contained measures of risk estimates and an expanded web of measures of perceived disease threat. Bootstrapping analyses revealed that perceived disease threat partially mediated the relationship between label and risk estimates, and defensiveness moderated the relationship between perceived disease threat and risk estimates.

This research is important from both a theoretical and applied perspective. Theoretically, this research elaborates on how health perceptions are formed, and presents a novel effect based on the interplay of categorization and defensive processes. From an applied perspective, this research has substantive implications for social welfare, as both preventive and care-seeking behaviors heavily rely on self-assessment.

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### ***Container Shape Convolution***

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The English idiom “don't judge a book by its cover” suggests that one should not prejudge objects based on its outward appearance alone. While well-intended, more often than not, the cover is all the information consumers have available when evaluating products. Product packages are an important instrument for marketers to differentiate their products, and frequently functions as a mini-billboard to draw consumer attention to specific product information.

Research on the shapes of packages has focused predominantly on its effect on volume estimates (Raghubir & Krishna 1999; Wansink & Van Ittersum 2003). Specifically, research demonstrates that a package's elongation positively influences volume perceptions; tall, skinny containers are perceived to contain more volume than short, wide containers with the same holding capacity. However, the relative skinny appearance of elongated containers may also implicitly activate the concept of healthiness (Chartrand 2005; Dijksterhuis & Bargh 2001; Singh & Singh 2011), resulting in container shape convolution. That is, consumers may experience conflict when evaluating drinks sold in elongated containers, such that they could influence both perceptions of the product's attributes (i.e., healthiness) and its total volume.

Research has shown that judgments can be influenced by contextual elements that activate learned associations in consumers' minds that subsequently influence product evaluations (Bargh & Chartrand 1999). In the case of elongation, we suggest that, in addition to the influencing volume perceptions, the perceptual thinness of an elongated container may also activate thoughts of health and beauty. These thoughts then influence a consumer's perceptions of the product's healthiness by being incorporated into their original representation of the product. Furthermore, we suggest that the product type, specifically the original health valence of the product, will determine whether the new information will be assimilated or contrasted, leading to elevated or lowered perceptions of the product's healthiness (Herr et al. 1983; Schwartz & Bless 1992).

We provide support for this theoretical framework through three experiments. In study 1, 226 undergraduate students (54% male;  $M_{age} = 20.5$ ) participated in a 2-condition between-subjects experiment where they examined a 12 ounce unlabeled aluminum can that was either elongated or traditionally shaped. Consistent with our theoretical framework, participants who inspected an elongated can

perceived it as being healthier ( $M_{\text{Elongated}} = 3.07$  vs.  $M_{\text{Traditional}} = 2.51$ ;  $F(1,225) = 15.21$   $p < .001$ ), as well as more voluminous ( $M_{\text{Elongated}} = 13.81\text{oz.}$  vs.  $M_{\text{Traditional}} = 11.75\text{oz.}$ ;  $F(1,221) = 2.24$ ;  $p < .01$ ), than those participants who evaluated the traditionally shaped can. Also, participants indicated that the elongated containers were more likely to be targeted at individuals with healthy and active lifestyles ( $M_{\text{Elongated}} = 3.442$  vs.  $M_{\text{Traditional}} = 2.66$ ;  $F(1,225) = 21.26$ ;  $p < .001$ ).

One caveat of Study 1 may be that participants had preexisting notions of what kinds of products were in differently shape cans (i.e., soda vs. energy drinks). To overcome this, Study 2 consisted of 122 participants (48% male;  $M_{\text{age}} = 31.12$ ) evaluating a product contained in 10 ounces glasses that were tall and thin or a short and wide. In order to examine whether elongation activates thoughts of health, we utilized a “quick think” task where participants listed 10 things they wanted to do in the next 24 hours (Berger and Fitzsimons 2008).

The results were consistent with first study. The product in the elongated glass was perceived to be both healthier ( $M_{\text{Elongated}} = 4.9$  vs.  $M_{\text{Traditional}} = 4.4$  fl. oz.;  $F(1, 120) = 5.98$ ;  $p = .01$ ) and contain more volume ( $M_{\text{Elongated}} = 10.4$  fl. oz. vs.  $M_{\text{Traditional}} = 8.1$  fl. oz.;  $F(1,120) = 5.78$ ,  $p = .01$ ), than the same product in the short, wide glass. Furthermore, consistent with our theoretical account, participants who viewed the elongated glasses thought of more healthy activities to place their to-do list than those who viewed the short, wide glasses ( $M_{\text{Elongated}} = .68$  vs.  $M_{\text{Traditional}} = .41$ ;  $F(1,120) = 4.93$ ;  $p < .05$ ).

In our next study, we examine an important moderator of the influence of elongation on health perceptions – the innate healthiness of the product. 141 undergraduates (48% male;  $M_{\text{age}} = 20.64$ ) participated in a 2 (elongated vs. shortened) by 2 (healthy: plain milk vs. unhealthy: chocolate milk) between-subjects experiment. In order to measure the whether health concepts were activate by elongation, participants rated the healthiness of other food products after first seeing their assigned glass (Harris, Bargh, and Brownell 2009). In order to measure the perception’s the drink focal product healthiness, participants indicated the extent the product in the assigned glass contained healthy and unhealthy ingredients (on a 9-point scale), which was subsequently aggregated to form an overall healthiness measure.

A significant interaction between product type and glass shape demonstrates that the influence of elongation on a product’s health perceptions depends on the type of product contained within it ( $\beta_{\text{Elongation}_x\text{ProductType}} = 4.57$ ;  $p < .01$ ). Specifically, the healthiness of a product increased for the relatively healthy product, and decreased for a relatively unhealthy product when in an elongated container. Furthermore, a moderated mediation analysis (Preacher, Rucker, & Hayes 2007) suggested that the influence of elongation on a product’s perceived healthiness is significantly moderated by the type of product contained in the glass. The ability of elongation to cue thoughts of health (by rating the other products healthier) is significantly dependent on the initial health perceptions of the product ( $\beta_{\text{Elongation}_x\text{ProductType}} = 1.31$  (.54);  $p < .05$ ). The indirect effect of a health priming on the perceived healthiness of the milk in the glass is significant in the regular milk condition (95% confidence interval =  $-1.5102/-1.1478$ ; 5000 draws), but not in the chocolate milk condition (95% confidence interval =  $-.3505/.6473$ ; 5000 draws).

In conclusion, the findings from three studies illustrate an interesting paradox. Although consumers tend to believe elongated containers contain more volume, consumers also consider the product healthier. There results, however, are dependent on the type of product in the container. Furthermore, this research also demonstrates that the shape of the container influences the level of (healthy and unhealthy) ingredients perceived to comprise the product.

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## *The Role of Reactance in Responses to One-sided Advertisements: How Health-Related Appeals Backfire Among Dieters*

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Andrea Morales, Arizona State University, USA

In this research, we explore consumer attitudes toward one-sided persuasion appeals that present only the negative aspects of consuming unhealthy food and determine how these attitudes influence subsequent food preferences. Public agencies often use public service announcements (PSAs) to encourage healthy behaviors and discourage unhealthy behaviors by pointing out the negative aspects of engaging in such unhealthy behaviors (e.g. “Fast Food Kills!”). We suggest that these kinds of messages can backfire. Reactance theory (Brehm 1969, 1989) posits that when individuals feel that their freedom to choose or act is constrained, they will initiate a motivational state of reactance to regain that freedom. Even though one-sided messages may not explicitly tell consumers what they should or should not do, focusing instead on providing consumers information about the negative aspects of a given behavior, we propose that these messages may nevertheless cause reactance in certain consumers. As such, rather than helping consumers, these messages may actually lead consumers to pursue goals counter to those intended by the message, such as increasing consumption of indulgent food.

Specifically, we propose that consumers’ dietary restraint status (Herman and Polivy 1980) will determine whether one-sided negative messages produce reactance rather than compliance. Because dieters are more concerned with their body image and/or weight, they are highly involved in and often emotional about issues of indulgent consumption. Therefore, when dieters read a one-sided negative message about unhealthy food (e.g., “All dessert is bad”), they perceive the message to be restricting their freedom to choose which foods to eat. As a result, they enter a state of reactance in which they are motivated to regain freedom, leading them to pursue actions that run opposite to the intended message. Conversely, dieters do not view a one-sided positive message about unhealthy food (e.g., “All dessert is good”) as freedom–constraining, as the message does not suggest they should avoid certain foods; therefore, dieters do not respond to such messages with reactance. Notably, since non-dieters do not monitor their food choices as closely as dieters and do not feel the need to restrain from eating certain foods, exposure to the one-sided negative messages should not activate a reactant state among nondieters.

In study 1, participants (n=397) randomly saw one of three messages: “All dessert is bad” (one-sided negative message), “All dessert is good” (one-sided positive message), and “All dessert is food” (neutral message). Next, in what was purportedly an unrelated study, participants pressed the “F” and “J” keys (labeled “pos” and “neg”) to indicate whether they thought a word was positive or negative. This task included 20 healthy food, 20 unhealthy food and 20 neutral words. Finally, we measured participants’ situational reactance (Hong and Faedda 1996). Dieters who saw the one-sided negative message scored higher on reactance ( $b=.33, t(381)=2.07, p<.05$ ) and had more positive thoughts about unhealthy food ( $b=2.12, t(381)=4.05, p<.01$ ) than dieters who received the neutral message. This effect was not significant among non-dieters. There was no effect of the one-sided positive message on the number of positive thoughts about unhealthy food or reactance for either dieters or non-dieters. There was no difference in the number of positive thoughts about either healthy food or neutral words between dieters and non-dieters across all three conditions ( $p>.39$ ).

In study 2, we investigated whether a one-sided negative message influences dieters’ actual food consumption. Participants (n=399) saw either the message “All sugary snacks are bad” or the message “All sugary snacks are good.” They then took part in an ostensibly unrelated study in which they ate Famous Amos cookies while viewing a 3-minute movie clip. Next, participants completed the situational reactance scale. Results showed that dieters who received the one-sided negative message scored higher on reactance ( $b=.44, t(396)=3.42, p<.01$ ) and consumed more cookies ( $b=9.05, t(396)=3.11, p<.01$ ) than dieters who received the positive one-sided message. As predicted, this effect was not significant among nondieters ( $p=.76$ ).

In study 3, we investigated the process underlying this phenomena. We also added a two-sided message as an additional control condition. Participants (n=327) saw one of three messages: "All dessert is bad," "All dessert is good," and "All dessert tastes good but is bad for your health." Participants then took part in an ostensibly unrelated study in which they chose a snack for every day in the next two weeks from a list of five unhealthy snacks and five healthy snacks. Participants then completed the situational reactance scale. Results showed that dieters who saw the one-sided negative message chose a higher number of unhealthy snacks than (1) dieters who saw the two-sided message ( $b=2.17$ ,  $t(323)=2.37$ ,  $p<.05$ ) and (2) dieters who saw the one-sided positive message ( $b=.94$ ,  $t(323)=1.61$ ,  $p=.11$ ). There was no difference in the number of unhealthy snacks chosen by nondieters ( $p>.5$ ). Moreover, a moderated mediation analysis showed that for dieters reactance mediates the effect of message styles on unhealthy choices (95% confidence interval exclusive of 0 [.04, .73]). For nondieters, however, reactance does not mediate the effect of message styles on unhealthy choices.

This research carries important implications for both consumers and public policy makers. Across three studies, we demonstrated how one-sided health messages about unhealthy food can backfire among dieters. Particularly, exposure to a one-sided negative message can trigger reactance, leading them to have more positive thoughts about unhealthy foods and consume more of them. Additional studies are underway to explore the effects of one-sided negative messages about healthy foods (e.g., vegetables) on both dieters and nondieters to provide deeper insight into the psychological processes driving these effects. In contrast to how consumers react to one-sided messages about unhealthy foods, we predict that because both dieters and non-dieters believe eating healthy foods is a positive behavior in which they should engage more, one-sided messages conveying only negative information about consuming vegetables will lead to a backfire effect among both groups. Preliminary findings suggest that this is indeed the case.

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## ***Conversations: Consumer Memory***

**Discussion Leader:** Elizabeth Loftus, University of California, Irvine

### **LUNCHEON AND PRESIDENTIAL ADDRESS**

**12:30pm-2:00pm**

**Ballroom**

### **SESSION 3**

**2:15pm-3:30pm**

## ***Symposium: Hollywood-Plus: Novel Avenues of Celebrity Influence***

**Chair:** Adriana Samper, Arizona State University, USA

### ***Consumers with Stars in their Eyes: The Influence of Celebrity Product Placement on Brand Perceptions and Behaviors***

Adriana Samper, Arizona State University, USA

Daniele Mathras, Arizona State University, USA\*

Andrea Morales, Arizona State University, USA

The promotion of a product or brand through candid use by celebrities, also known as “celebrity product placement,” is increasingly being used by brands as a strategy to garner mass media exposure (Ashbrook 2011). For example, the success of popular brands such as UGG has been attributed to candid photos of celebrities wearing the sheepskin boots in their day to day lives (Jones 2007). These photos are highly desired by consumers and entertainment news magazines, and can serve as a valuable marketing tool if the featured brands are associated with a celebrity. While marketing researchers have extensively documented the effects of product placement in television and film (e.g., Russell 2002, Wiles and Danielova 2009), attention to celebrity product placement (CPP) in the academic literature is scant at best. We aim to close this gap, examining the effectiveness of CPP relative to paid endorsements in improving brand attitudes. We also look at the drivers of this response and the individuals for whom this marketing strategy is most impactful.

Unlike celebrity endorsements or traditional product placement, consumers are much less savvy to the influence of CPP (a pretest confirmed that 71% of 124 MTurk participants felt that celebrities normally used the products depicted in candid paparazzi photos in their daily life (versus were paid to use)), despite the fact that celebrities often receive many such products as gifts. As such, CPP capitalizes on meaning transfer from a celebrity to the focal product (McCracken 1989) while operating outside of the realm of persuasion knowledge, maximizing persuasion and improving attitudes toward focal brands. Further, vulnerability has been shown to increase trust (e.g., Deutsch 1962; Moorman, Zaltman, & Deshpande, 1992), and we propose that the candid nature of CPP images elicits a degree of vulnerability that increases consumer trust of the celebrity. Consistent with this proposed process, we argue that this strategy is most effective for individuals highly susceptible to informational influence (Bearden, Netermeyer, and Teel 1989), or those most apt to look to trusted others for guidance on their purchase behaviors.

Study 1 demonstrates the basic effect that CPP is more effective in increasing brand attitudes than celebrity endorsement. Female panel participants (N=65) were randomly assigned to one of two conditions: celebrity endorsement versus CPP. All women saw the same photo of Jennifer Lawrence; the endorsement condition displayed the title, “The Fast Metabolism Diet,” and discussed Jennifer Lawrence as a client who had seen amazing results from the diet, while the CPP condition displayed the title, “Stargazing,” (ostensibly capturing the daily lives of celebrities) and described how Jennifer Lawrence successfully follows the Fast Metabolism Diet. After a neutral filler task, participants rated the Fast Metabolism Diet (among various other diets). Supporting our prediction, participants viewed only the Fast Metabolism brand more positively when presented via celebrity placement ( $M=4.16$ ) versus the ad ( $M=3.47$ ,  $p=.03$ ).

Study 2 replicates Study 1 with a new population and stimulus. Undergraduate participants (N=201) were randomly assigned to view a celebrity endorsement versus CPP image featuring Ryan Gosling carrying coffee. As in Study 1, the photo was exactly the same, yet the titles of the images either read, “Bucks County Coffee” (the coffee brand), or “Stargazing,” with both images describing how Ryan Gosling enjoys Bucks County Coffee. Participants viewed the images, completed filler measures, and then indicated how positively they viewed Bucks coffee (among other coffee brands). Replicating Study 1, participants rated only Bucks coffee more favorably in the CPP ( $M=4.12$ ) versus endorsement ( $M=3.80$ ;  $p=.03$ ) condition.

In Study 3, we identify for whom these effects are most pronounced and explore downstream effects on behavior. MTurk participants (N=120) first completed individual difference measures for consumer susceptibility to informational influence (CSII). Next, they were randomly assigned into either a celebrity endorsement versus a CPP condition, where they saw the same photo of Jennifer Lawrence for the exercise program “Orangetheory Fitness” with a different heading depending on condition. Next, we measured how long participants spent learning more about Orangetheory through the company website. A 2 x continuous regression on viewing time revealed a significant image condition x CSII interaction ( $p=.05$ ). A simple slopes analysis revealed that with CPP, high CSII individuals spent more time viewing the website relative to low CSII individuals ( $p = .03$ ), but there were no such effects with the



endorsement ( $p=.45$ ). Additionally, at high CSII, the CPP increased viewing time relative to endorsement ( $p=.02$ ), but not for low CSII ( $p=.54$ ).

Study 4 aimed to understand the underlying process and identify potential moderators of this effect. We theorized that CPP is more effective because persuasion knowledge remains low, and as such, its advantage should disappear when persuasion knowledge is made salient. Female MTurk participants ( $N=133$ ) were randomly assigned to this 2 (image condition: CPP versus endorsement) x 2 (persuasion knowledge: high vs. control) design. We first manipulated persuasion knowledge: participants in the high persuasion condition read a passage about how celebrity paparazzi photographs were often staged while those in the control condition read no passage). Next, participants saw a photo of Sandra Bullock carrying REI shopping bags, presented as celebrity endorsement or CPP as in prior studies. After a filler task, participants rated a series of brands on favorability and usage likelihood (two REI items,  $r=.51$ ). In addition, participants completed a 6-item measure of how trustworthy they found Sandra Bullock ( $\alpha = .97$ ; Ohanian 1990). A 2 x 2 ANOVA on the REI brand index revealed a significant interaction ( $p=.04$ ). Replicating prior studies, in the control condition, CPP led to more favorable brand ratings than endorsement ( $p=.05$ ). However, when persuasion knowledge was salient, there was no difference in perceptions ( $p=.33$ ). Analyses revealed a similar pattern of interaction on trustworthiness ( $p=.01$ ). Bootstrapping mediation analyses revealed that only in the control condition, did trustworthiness mediated the effect of image type on the brand index ( $B=.19; .04, .44$ ); trustworthiness did not mediate under high persuasion knowledge ( $B=-.12, -.36, .03$ ).

In sum, four studies reveal that celebrity product placement is indeed more effective than traditional advertisements, more pronounced for individuals high on CSII, and mediated by the trustworthiness that the celebrity product placement image elicits.

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### ***Social Media and Celebrity Endorsement: How Social Connections can Impact Endorsement Effectiveness***

Lea Dunn, University of Washington, USA\*

Joey Hoegg, University of British Columbia, Canada

Celebrity endorsement has been employed as a marketing strategy for over 150 years and makes up 20-25% of all advertisements (Feldman 2007; Shimp 2000). Prior research has shown that advertisements containing celebrity endorsers are rated more favorably and can garner higher purchase intention than those employing non-celebrity endorsers (Atkin and Block 1983). Although the impact of celebrity endorsement on advertising persuasion has been well documented, the recent shift in marketing communications toward social media channels and the increased accessibility of celebrities through social media warrant renewed investigation into how celebrity endorsement impacts consumer decision making. Social media has effectively changed the way in which consumers relate to celebrities. Traditionally, celebrities were at arm's length from the public – elegant and glamorous but mysterious, and known only through carefully scripted interactions. Social media platforms have enabled celebrities to communicate directly with their fans and vice versa. This dramatic change in the communication between celebrities and consumers may alter the effectiveness of celebrity endorsements. The current research addresses this issue.

Several criteria have been identified as contributing to the effectiveness of a celebrity endorsement, including the attractiveness and likeability of the celebrity, the extent to which consumers believe the celebrity genuinely likes the product, and the perceived fit between the celebrity and the product (Atkin and Block 1983; Kahle and Homer 1985; Kamins 1990; Kamins and Gupta 1994). Another relevant factor may be the perceived similarity between the celebrity and the consumer. Prior research on advertising has argued that a source that is perceived as similar to the consumer is considered more credible and more persuasive. (Feick and Higie

1992; Freidman 1984; Pornpitakpan 2004). In general, celebrities are not viewed as similar to consumers. However, by heightening the perceived accessibility of celebrities through certain types of social media, they may be perceived as more similar to consumers, which may in turn enhance the effectiveness of a celebrity endorsement. Specifically, microblogging social media sites that enable two-way conversation (like Twitter) enhance the sense of interaction between consumers and celebrities and create a feeling of social connectedness between the consumer and the celebrity. Other types of social networks, which serve more as an opportunity for a celebrity to present him or herself but do not promote conversation, should be less effective at generating this feeling of social connection.

We predict that the sense of interaction enabled by celebrity participation in a microblogging site heightens feelings of social connection relative to participation in other types of social networks. Social connection has been shown to increase liking and enhance perceived similarity among connected individuals (Forsyth 1999). Thus, we predict this social connectedness should lead to greater perceived similarity to the celebrity. Greater perceived similarity should, in turn, enhance the effectiveness of celebrity endorsements (McGuire 1985)

Study 1 shows that celebrity presence on a microblogging site causes consumers to feel more similar to the celebrity than their presence on a standard social network. We manipulated whether participants read a scenario about an article about a celebrity's social media usage. The participants read that the celebrity's favorite social media platform was either Twitter (microblogging) or Facebook (social networking) and that they either followed the celebrity or did not. Results showed that participants that followed the celebrity on Twitter felt more similar to the celebrity ( $M=4.09$ ) than participants that followed the celebrity on Facebook ( $M=2.75$ ,  $p=.006$ ) or those that did not follow the celebrity on Twitter ( $M=2.42$ ,  $p<.001$ ). In addition, we found that feelings of social connectedness mediated the relationship between social media usage and similarity.

Study 2 considers how the increase in perceived similarity impacts celebrity endorsement. Prior research in source effects has shown that similar sources are viewed as more credible and reliable (McGuire 1985). We argue that this perceived similarity reduces the "product fit" problem of celebrity endorsement, whereby there must be a fit between the celebrity and endorsed product in order for consumers to believe the veracity of the endorsement. To test this, we created endorsement ads for equally liked celebrities who either used Twitter (Neil Patrick Harris and Kim Kardashian) or did not use Twitter (Paul Rudd and Megan Fox). These ads either featured an endorsement for a product that was pretested to match the celebrity (high product fit) or not match the celebrity (low product fit). Results showed that for non-Twitter celebrities, there was a traditional positive effect of product fit on brand attitudes. However, when the ads featured Twitter celebrities, there was no difference in brand attitude for high or low product fit advertisements. As in study 1, the Twitter celebrities were seen as significantly more similar to the participants as the non-Twitter celebrities. We also found that participants rated the low fit product as a significantly better fit for Twitter celebrities than non-Twitter celebrities. Study 2 shows that not only does social media engagement lead to higher perceptions of similarity, but that these perceptions can reduce the necessity of product fit in subsequent celebrity endorsements.

In a final study, we show that the connection and enhanced sense of similarity created through microblogging sites can buffer both a celebrity and an endorsed brand against negative publicity. Participants read a scenario in which they heard a negative or neutral comment made by a celebrity endorser of a major brand on one of three media: Twitter, Facebook or the radio. Participants who read the comment on Twitter thought that the celebrity would have a positive impact on the brand regardless of whether the comment was negative ( $M=5.30$ ) or neutral ( $M=5.25$ ). Importantly, participants who read the negative comment on Twitter thought the celebrity would have a significantly more positive impact than those on Facebook ( $M=3.09$ ;  $p<.001$ ) or the radio ( $M=3.17$ ;  $p<.001$ ).

Prior research has generally treated social media as a uniform concept. Focusing on the impact on celebrity endorsement, our research demonstrates that different forms of social media have different effects on consumers.

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***Double Secret Promotion: The Impact of Perceptual Congruence with Celebrities on Brand Evaluations***

Dan Rice, Louisiana State University, USA\*

Andrew Kuo, Louisiana State University, USA

The Elaboration Likelihood Model (ELM) (Petty & Cacioppo, 1986) demonstrates that an advertisement's argument may influence consumers through either a central (high involvement) or a peripheral (low involvement) route. Research on celebrity endorsements has shown that under high involvement, consumers will be influenced by the "source congruence" between a celebrity and the brands they endorse (e.g., Kamins et al., 1989; McCracken 1989; Kirmani & Shiv, 1998; Rice et al., 2012). However, under low involvement, celebrity endorsers influence consumers via peripheral routes (e.g., Kahle & Homer 1985; Kirmani & Shiv 1998; Kang & Herr 2006; Rice et al. 2012), where source congruence is unimportant.

Importantly, previous celebrity endorsement research has typically defined the congruence between an endorser and brand in "conceptual" terms (e.g., McCracken's meaning transfer), and assessments of congruence include measures of whether the celebrity meaning fits the brand and whether there is overlap between the celebrity and product category. Recent research on mere association (Dimofte & Yalch, 2011) and fit-as-fluency effects (Kuo & Rice, 2015), however, suggests that there are situations in which brands may benefit from "perceptual congruence" (e.g., phonetic similarity) with celebrities in the absence of traditional promotions. We propose that this "perceptual congruence" may lead to brand benefits even if the traditional "conceptual congruence" is low through mechanisms that are distinct from the typical peripheral route (Petty & Cacioppo, 1986). The topic is important, as the persuasion knowledge model (Friedstad & Wright 1994) suggests that today's consumers adjust their response as they become aware of persuasion attempts.

In Study 1, one hundred and ninety-seven university students participated for course credit. Participants were randomly assigned to one of four conditions in a 2 (Article: Shown, Not Shown) x 2 (Brand: High Perceptual Congruence, Low Perceptual Congruence) design.

We manipulated the article factor by either showing participants a short article about the charitable work done by Sean Penn or not showing the article. Next, as a cover story, participants were told that the researchers in a separate study wished to investigate students' knowledge of tennis equipment and asked them to evaluate two different brands of tennis balls (Wilson and Penn). We then assessed the conceptual congruence and perceptual congruence of Sean Penn and each brand of tennis balls and the brand attitudes on a series of seven-point scales. ANOVA results reveal a significant celebrity presence x brand interaction ( $p < .05$ ). Specific contrasts show that while the attitudinal difference between the celebrity shown and celebrity not shown conditions was non-significant when the Wilson Brand was shown ( $p > .7$ ), participants had a significantly more favorable attitude toward the Penn Tennis Ball brand ( $p = .019$ ) when Sean Penn was shown ( $M = 22.53$ ) than when he was not ( $M = 20.15$ ).

A mediation test on the effect on brand attitude with the attitude toward brand name and three source characteristic indices (Liking, Familiarity and Trust; Rice et al., 2012) as potential mediators performed with the indirect.sbs SPSS module (Preacher & Hayes, 2008) showed only effects of the brand name attitude. Thus, the brand effects are not driven by source characteristics, but rather the perceptual congruence with the brand name, not the celebrity himself.

While Study 1 provides evidence of effects of perceptual congruence on brand attitude, the mechanism through which the effect acts is unclear. It is possible that the mention of the name previously is due to perceptual fluency. Participants may have mistaken the ease with which they processed the brand name “Penn” (due to previous exposure to the name Sean Penn). Alternatively, the effect could be due to a mere association (Lee & Labroo, 2004), where the positive associations with Sean Penn are transferred to the perceptually related (but conceptually incongruent) Penn Tennis balls. Experiment 2 is designed to test these competing theories.

In Study 2, one hundred and forty-one student participants were randomly assigned to one of six conditions in a 3 (Article Valence: Negative, Neutral, Positive) x 2 (Brand: High Perceptual Fit, Low Perceptual Fit) design. The procedure was similar to experiment 1 except all participants saw an article, either positive, negative or neutral in relation to Sean Penn. Later, participants were asked to evaluate two different brands of motor oil (Valvoline and Pennzoil), under the cover story of researchers wanting to know about students’ automotive knowledge. We assessed the conceptual congruence and perceptual congruence of Sean Penn with each brand of motor oil and the brand attitude toward the motor oil with the same 7-point scales as in experiment 1.

We first report congruence measures. A valence x brand ANOVA revealed a significant main effect of brand ( $p < .001$ ) and no other significant effects on perceptual congruence. As expected, the perceptual congruence was significantly higher for Pennzoil ( $M = 4.94$ ) than for Valvoline ( $M = 1.46$ ). Conversely, a valence x brand ANOVA revealed no significant main or interaction effects for either factor on the conceptual congruence measures.

We also examined brand attitudes. The results of a valence x brand ANOVA revealed a significant two-way interaction ( $p = .04$ ). There was no significant effect of valence on brand attitude for Valvoline ( $p > .6$ ). However, there was a significant effect of valence on brand attitude for the perceptually related Pennzoil brand, where brand attitude ratings were significantly more positive ( $M = 6.15$ ) in the positive condition than either the neutral ( $M = 5.45$ ) or the negative ( $M = 5.56$ ) article conditions (all  $p$ 's  $< .03$ ). In sum, if brand attitude was solely influenced by the perceptual fluency of the brand name, the data would show a main effect of brand such that Pennzoil is more favorable than Valvoline. However, our results are consistent with a mere association mechanism, where the data show an interaction in which the positive article about Sean Penn led to (1) significantly more favorable brand attitude than the negative and neutral articles for Pennzoil, and (2) no difference among article conditions for Valvoline ads.

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## ***Symposium: How Extraneous Numerical Markers Bias Consumer Judgment and Choice***

**Chair:** Anastasiya Pocheptsova, University of Maryland, USA

Meng Zhu, The Johns Hopkins Carey Business School

### ***Too Attractive to Pass: A Peculiar Appeal of Shorter Redemption Windows of Daily Deals***

Anastasiya Pocheptsova, University of Maryland, USA\*

Yogesh Yoshi, University of Maryland, USA

Daily deals, such as Groupon and Living Social, have fast become a popular sensation among consumers, with both websites boasting millions of users and billions in revenues. For example, Groupon (2013) reported an active customer base of 44.9 million; and a revenue increase of 31% North America alone. Such websites typically offer a few local “daily deals” for products or services that can be purchased at a substantial discount (40-60%). For example, consumers may buy a parking pass for \$12 instead of \$24, or a massage

for \$49 instead of \$115. Interestingly, such deals come with different redemption windows, ranging from as short as 30 days to as long as one year. Longer redemption windows provide clear benefits to consumers by allowing them more flexibility regarding when to use their deal and increasing opportunities for consumption. A priori, one might expect that consumers would anticipate some uncertainty regarding when they would have an occasion to redeem a particular deal, preferring deals with a longer (vs. shorter) redemption windows. . On the contrary, in a series of studies including both experimental data and data on deals from the LivingSocial website, we identify conditions under which consumers are more likely to purchase deals that have shorter rather than longer redemption windows.

We argue that consumers interpret shorter redemption windows as a signal that the deal is more scarce (see also Innman, Peter & Raghuram 1997 for a similar notion of the relationship between coupon availability time frame and perceptions of scarcity). Further, consistent with the findings that buying hedonic (vs. utilitarian) goods require more justification (Khan and Dhar 2010; Kivetz and Simonson 2002; Kivetz and Zheng 2006; Okada 2005), we show that consumers use short redemption windows to justify the purchase of hedonic deals. Specifically, while consumers express preference for longer redemption windows for deals for utilitarian goods or services, the opposite holds for deals involving hedonic goods and services.

To test this proposition, in Study 1 ( $N = 136$ ) we offered students an opportunity to participate (using their own money) in daily deals offered by a campus website. The participants were assigned to one of the cells in a 2 (redemption window: 1 month vs. 3 months) x 2 (deal: hedonic service vs. utilitarian service) between subjects design. As predicted, we find an interaction between the two manipulated factors ( $F(132) = 3.56, p < .06$ ). Specifically, participants were more likely to purchase a deal for hedonic service when it was offered with a one month vs. three months redemption window ( $M_{\text{short}} = 5.03$  vs.  $M_{\text{long}} = 4.38$ ), but directionally were more likely to prefer the reverse for utilitarian service ( $M_{\text{short}} = 6.46$  vs.  $M_{\text{long}} = 6.64$ ). We replicated this effect in Study 2 ( $N = 211$ , interaction effect  $F(210) = 8.63, p < .01$ ), using a general population and varying the type of product purchased (hedonic vs. utilitarian) while keeping the service provider the same (hedonic:  $M_{\text{short}} = 4.26$  vs.  $M_{\text{long}} = 3.78$  and utilitarian:  $M_{\text{short}} = 3.77$  vs.  $M_{\text{long}} = 5.22$ ).

Next, we test a potential moderator of our effect – the desirability of the product. We reasoned that highly attractive hedonic products should elicit higher level of guilt and therefore would require higher level of justification before making a purchase. The products in Studies 1&2 were all highly attractive and therefore we were not able to test this hypothesis. In study 3, we analyzed purchase data of 2349 deals on Living Social. The data included the redemption window, the time that the deal was available, the level of discount and, importantly, the number of “likes” given to the product on Facebook. We used the number of likes (which ranged from 0 to 880) as proxy for desirability of the product. Two coders, blind to the hypotheses, coded the deals into hedonic vs. utilitarian category. Controlling for the factors described above, there was a significant three-way interaction between the number of “likes”, the redemption window and the hedonic vs. utilitarian nature of the deal ( $\beta = -1.27, t(2348) = 8.46, p < .001$ ). As expected, a follow-up spotlight analysis revealed that for hedonic products consumers were more likely to buy deals for highly desirable products when the redemption window was short vs. long ( $M_{\text{short}} = 1214.5$  vs.  $M_{\text{long}} = 798.8, t(1657) = 9.61, p < .001$ ), but the reverse was true for less desirable products ( $M_{\text{short}} = 251$  vs.  $M_{\text{long}} = 453.7, t(1657) = 5.50, p < .001$ ). In contrast, for utilitarian products consumers were more likely to buy deals with longer redemption windows, even for highly liked products ( $M_{\text{short}} = 1074$  vs.  $M_{\text{long}} = 1286, t(678) = 4.56, p < .001$ ).

In Study 4 ( $N = 80$ ), we focused on underlying process by (a) measuring perceptions of scarcity as a function of short vs. long redemption windows and (b) by asking half of participants to justify their preference for the deal. All participants were asked to evaluate a deal from their highly preferred retailer (hedonic or utilitarian, manipulated between subjects). A three-way interaction between justification, nature of the deal and redemption window on ratings of scarcity emerged ( $F(72) = 8.63, p < .01$ ). While redemption window had no effect on perceptions of scarcity for utilitarian deals ( $F_s < 1$ ), participants judged deals with shorter (vs. longer) redemption windows to be more scarce ( $M_{\text{short}} = 5.33$  vs.  $M_{\text{long}} = 4.33, F(72) = 6.3, p = .014$ ). Further, this effect was even more

pronounced under justification ( $M_{\text{short}} = 5.83$  vs.  $M_{\text{long}} = 3.64$ ,  $F(72) = 11.87$ ,  $p < .001$ ).

Across several studies, we find that consumers deviate from an optimal preference for deals with longer redemption window in favor of deals that expire sooner for hedonic and, ironically, highly desired products. We provide initial evidence that such effect is driven by perceptions of scarcity and need to justify the purchase. Our findings provide an interesting insight into how time frames can bias consumer behavior in the daily deals market.

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### ***The Urgency Bias***

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Some tasks that we face are urgent and require immediate attention and others are important and involve great significance. When faced with multiple tasks of varying urgency and importance, how do we decide which task to perform? People may prefer working on urgent rather than important tasks, because important tasks are often more difficult, or because important tasks are often further away from goal completion (Kivetz, Urminsky, and Zheng 2006). Additionally, the missed outcome or opportunity for an urgent task may be perceived as more scarce and valuable (Brock 1968; Cialdini 2009). Finally, urgent tasks are often dependent of each other—missing one urgent task may result in series of losses in the future.

We propose that consumers will prefer working on urgent tasks over importance tasks, even when task difficulty, goal gradient, outcome scarcity and task interdependence are held constant. We term this tendency to prefer urgency over importance as “urgency bias”. Specifically, we define urgency (importance) as the state that requires immediate attention (involves great significance). Urgent tasks are characterized by short vs. long completion windows, and important tasks are characterized by big vs. small outcome magnitude. Urgency bias predicts that people are more likely to perform urgent tasks of less importance, rather than more important tasks of less urgency. Further, we propose an attention-based account to explain the urgency bias. That is, while deciding which tasks to work on, people pay more attention to urgent tasks with short completion window, instead of important tasks involving bigger outcomes.

Study 1 is designed to test the proposed main effect employing a simplified game. Participants saw one big ball and some small balls on the computer screen, and they could earn points by clicking on the balls. Relatively speaking, clicking on the small (big) balls is an urgent/not important task (important/not urgent) in the game. Specifically, participants were given one chance to click every other second throughout the 1-minute online game. Each click on the big (small) ball gave them 8 points (6 points). In the *urgency* condition, participants were told that they could click the big ball to earn points at any time, but they could only click a small ball to earn points when the small ball was active (i.e., when there was a counting down number 5, 4, 3, 2, or 1, on it). In the *control* condition, the game was identical except that both the big and small balls were active throughout the game. All participants were told that their task was to earn as many points as possible and they would be paid 1 cent for every 5 points earned at the end of the game. We calculated cumulative probabilities of clicking the big ball every other second. A 2(Condition) x 25(the cumulative probability in each period) mixed ANOVA revealed a significant interaction, suggesting that participants in the *urgent* condition were less likely to click the big ball than those in the *control* condition, and that the likelihood of clicking the big ball increased faster over time in the *urgent* condition than in the *control* condition. These results provide an initial demonstration of urgency bias. In Study 2, we

replicated these findings using a different game in which (1) we used probability rather than a countdown window to produce urgency; and (2) not working on the important task results in a bigger loss, rather than working on the important task leading to bigger gain.

Study 3 generalizes the findings from simplified games to a real-life consequential choice context. Specifically, 119 Mturkers signed up for this study for a fixed payment of 50 cents. They were told that they could choose one of two tasks to take, Task A or Task B. They were told that in both tasks they would be given 3 minutes to type as many as possible out of 100 randomly generated 6-letter strings in the reversed order. All participants were told that they would earn a bonus that would be added to their mturk account by completing either of the tasks, and the level of bonus for each task would be randomly determined by a randomizer. All participants were assigned to earn a bonus of 12 cents by completing Task A, or a bonus of 16 cents by completing Task B. In the *urgency* condition, participants were further told that the two tasks also differed in their availability which would be randomly determined. They were then shown a dynamic randomizer which always told them that Task A would expire in 5 minutes, and Task B would expire in 50 minutes. In the *control* condition, participants were told that both tasks would expire in 50 minutes instead. As predicted, participants were significantly more likely to choose Task A (the low-payoff option) in the *urgency* condition than in the *control* condition (36.4% vs. 11.9%,  $p = .002$ ).

To test the proposed attention-based account, employing the same game as in Study 1, Study 4 asked participants to indicate at the end of the game whether they thought more about the small balls or the big ball when playing the game. The indirect effect differs from zero at the 95% CI: [-.29, -.14], indicating that attention mediates the effect of urgency manipulation on the likelihood to click the big ball. Finally, employing the same task as in Study 3, Study 5 manipulated participants' attentional focus by showing them a reminder (which reads as "Note: If you choose Task A, you will lose the opportunity to earn 16 cents. If you choose Task B, you will lose the opportunity to earn 12 cents") or not, in addition to manipulating urgency. Replicating previous findings, when no reminder was shown, participants were more likely to choose Task A (the low-payoff option) in the *urgency* condition than in the *control* condition (48.5% vs. 1.9%,  $p < .001$ ). However, when the reminder was shown, no difference in choice share was found. In sum, we find that people exhibits the urgency bias, preferring urgency over importance.

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### ***More Time, More Work: How (Incidental) Time Limits Bias Estimates of Project Time***

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People have been shown to consume more time to do a specific job when more time is available to them (e.g. "Parkinson's Law" 1955; Bryan and Locke 1966). The increased effort can lead to better objective performance in the presence of both self-imposed as well as externally-imposed deadlines (Ariely and Wertenbroch, 2002). In this research, we investigate people's beliefs about others' performance on tasks, depending on the task time limit. Across five completed studies, we find evidence that such beliefs are consistent with a general scope perception account wherein longer time limits are naively associated with a larger scope of work.

In Study 1, *judges* read about an actual pretest in which all *workers* solved a 67 piece jigsaw puzzle in an untimed condition and took 31 minutes or less. Jigsaw puzzles were chosen for this controlled experiment because it is easy to quantify the amount of work, and assuming there is only one way to 'solve' it correctly, quality of work is not relevant. In an incentive-compatible setting, *judges* estimated how long it would take the average *worker* in a new experiment assigned randomly (using a coin toss) to different timed conditions (35 minutes vs. 60 minutes) to solve the jigsaw puzzle. Between subjects, the estimated average time in the long (60

minutes) vs. short (35 minutes) time limit conditions was 34 vs. 26 minutes ( $p < .001$ ), compared to 29 minutes in the control (unlimited time) condition. The results could not be explained by incidental anchors, informational or quality inferences, or intrinsic motivation.

In Study 2, *judges* were given the same background information and one of three time limits (30 mins, 45 mins, unlimited time control), but were told that the *workers* themselves would not know about the time limits as they worked on the puzzles. Again, *judges* estimated more time in the longer time limit condition (31 vs. 28 minutes,  $p < .05$ ). These finding cannot be explained by the judges' anticipating the effects of time limits on workers and accurately applying Parkinson's Law.

In contrast, we propose that longer time limits are simply associated with "larger" tasks, and therefore people will estimate not only longer completion times, but also larger scope of the task. In the next two studies, *judges* were asked to estimate the number of pieces in the puzzle (as a proxy for the scope of work) and were provided with the average time (Study 3) or an exact distribution of times (Study 4) taken to solve the puzzle under untimed conditions. *Judges* estimated more puzzle pieces in the 45 minutes condition than in the 30 minutes condition (Means: 177 vs. 131,  $p < .05$ ; 122 vs. 103,  $p < .10$  respectively).

Lastly, in an incentive-compatible game *judges* budgeted for a task to be conducted by a sub-contractor who would be paid based on time spent and did not know about time limits. Judges allocated significantly more money for the task (\$6.09 vs. \$5.26,  $p < .05$ ) when more time was available to complete it, despite having the same distribution from which the actual time would be drawn, which impacted their own earnings.

The studies suggest that people overgeneralize rules about the relationship between time limits and work, which they have learned in relevant contexts and over-apply them, resulting in systematically biased decisions. The perceived association between scope of work and time can result in suboptimal choices by an economic agent responsible for sub-contracting tasks with pre-decided time limits which are exogenously determined. This can lead to shifts in preferences for a fixed rate contract versus a variable rate contracts when available time is salient in the decision environment, and therefore can have serious financial implications.

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### ***The Effect of Reward Quantification on Actual Program Participation***

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For many programs, ongoing active user participation is an important component. Examples include programs for exercise, diet, frequent buyer rewards, and financial budgeting. For these types of programs, marketers have a dual purpose of both exciting people enough to enroll, but also motivating people to participate. Given that measuring participation outcomes is difficult, but measuring click and enrollment responses is relatively straightforward, most marketers focus on techniques to increase enrollment, with the hope that participation will follow. This leads to an understandable tendency to focus on attention-getting techniques, such as the maximum potential reward that participants could earn. In this particular set of experiments, we look at a program which offers rewards and consider how the language used to describe these rewards affects both enrollment and ongoing participation.

The tendency to focus attention on the maximum potential reward is a reasonable one. Research suggests that overstatement of benefits can lead to more favorable ratings of product quality than understatement (Olshavsky & Miller, 1972). And generally, higher



incentives are more attractive than lower incentives for motivating participation (Locke, Latham, & Erez, 1988). However, this emphasis on the maximum potential reward may cause people to focus on that reward, particularly if that potential is expressed in the form of a number. The mere presence of numerical marker, regardless of its validity as a target, can often act as an anchor for expectations from which people insufficiently adjust (Tversky & Kahneman, 1974). Research on lotteries and gambling has shown that demand for lottery tickets is driven by the maximum potential payout, rather than a calculation of expected return (Forrest, Simmons, & Chesters, 2002) and that gamblers often focus on the amount they could win as an anchor (Lichtenstein and Slovic 1971).

If people do use this maximum potential reward as an anchor, it could have significant effects on their eventual satisfaction with the program. On the positive side, the ingoing expectation creates an initial frame of reference that is then updated using information about performance relative to the expectation (Oliver, 1980), so the high target might generate sticky positive expectations. On the other hand, product performance evaluations can depend more on discrepancies relative to expectations than on actual performance (Weaver and Brickman 1974), so if people fail to perform at the expected level, this could have a negative impact on their satisfaction.

Similarly, research on goal performance suggests that people update their opinions about the importance of the goal based on performance towards that goal. In some cases, dissatisfaction with performance on a goal leads people to try to improve their performance, suggesting they will push to achieve the high target (Fishbach, Dhar, & Zhang, 2006). However, if the lack of performance is perceived as a personal failure, it can result in decreased commitment to a goal (Soman & Cheema, 2004), particularly if they feel the target is unachievable.

In an initial online field experiment (N=8,918), we tested different email recruitment messages in partnership with a large wellness provider, and measured clicks, enrollment, and ongoing participation. We randomly assigned potential participants to receive either a quantified recruitment email (“earn up to \$125 in rewards”) or a non-quantified recruitment email (“earn rewards”) and found that those who received the quantified email were much more likely to click the enrollment link (33% versus 24%,  $p < .001$ ) and somewhat more likely to enroll in the program (10.02% versus 8.83%,  $p = .05$ ). This supports the idea that the high target attracts positive attention and motivates people to enroll. However, the average duration of participation for those who enrolled from the quantified message was lower (38 days versus 41 days out of the 60 days measured,  $p = .05$ ) and more of them dropped out both on the first day and during the first two weeks, despite earning just as much in rewards as those from the non-quantified condition.

In a follow up study on Amazon’s Mechanical Turk, we tested several different potential recruitment messages which varied the language used to describe the potential reward amount (“up to \$50”, “up to \$20”, “\$20 or more”, or no specific target given). We found that people adopt numbers in recruitment messages as personal targets, and are much more likely to be dissatisfied with the program if they do not meet those targets. People who are told they can earn “up to \$50” for participation expect to earn substantially more than those who were told they could earn “\$20 or more” (\$40 vs \$30,  $t = -4.7$ ,  $p < .001$ ), even though the conditions for earning rewards were the same in both conditions, and up to \$50 has a firm upper bound, which should limit the potential reward.

These results help us understand how people shape their expectations about goal formation and progress and thus how marketers can target messages more appropriately to encourage ongoing participation. Goal formation is not necessarily an explicit consideration of what would be a reasonable target, however we show that it is influenced by the numerical markers used to describe the program. Marketers should be aware of this issue when describing benefits to potential participants, in order to avoid frustrating their customers if these targets are unlikely to be reached.

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# **Symposium: Social Media Experience: Implications for Well-Being, Word-of-Mouth, and Brand Consumption**

**Chair:** Donna Hoffman, George Washington University, USA

## ***Cyber Exclusion: When Social Media is Socially Excluding***

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Social exclusion occurs when passively ignored or actively rejected by others, and causes great social pain. Such social pain is comparable to the effects of physical pain (Eisenberger et al 2003), such that the same areas of the brain are activated when rejected by peers (a metaphorical slap in the face) as when physically slapped in the face. Drawing upon the impact-bias literature (Wilson & Gilbert 2005), perspective-taking literature (Hung & Mukhopadhyay 2012), and media-richness literature (Daft & Lengel 1986; Schlosser 2009), we hypothesize that individuals will forecast others' negative experience with online social exclusion to be greater than their own, thereby reflecting a fortitude gap (H1). We also predict that the medium in which the exclusion takes place will affect forecasted negative experiences, where FTF (vs. online) exclusion are forecasted to be more negative (H2a), thereby causing individuals to be more receptive to social causes (H2b).

In study 1, we test H1 by examining whether participants overestimate or underestimate another's negative experiences when being excluded during an online game. To do so, 171 participants either visualized or directly experienced being included or excluded in an online ball-tossing game (Cyberball; Williams et al. 2000). After the game, participants indicated how they felt on an overall negative affect scale, and six negative emotion items (rejected, ignored, sad, angry, lonely, and jealous; Nordgren et al. 2011). Afterwards, participants visualized the game from another person's perspective and completed the negative affect and negative emotion items as before. We calculated the gap by subtracting the average scores of those who directly experienced inclusion or exclusion during the game from how participants expected the other person to feel, such that positive (negative) scores reflect a fortitude (empathy) gap of overestimating (underestimating) others' negative feelings. Thus, the design was a 2 (experience: experienced or visualized) x 2 (self-perspective: excluded or accepted) x 2 (other-perspective: excluded or accepted) between-subjects design.

For negative affect, a 2 x 2 x 2 ANOVA yielded a significant other-perspective main effect that reflects a fortitude gap ( $F(1,163)=20.29, p < .001$ ): participants overestimated how much negative affect others would feel when excluded ( $M=.495$ ) than included ( $M= -.608$ ). This result was replicated across the six emotions (all  $F_s(1,163) > 15.06, p < .001$ ). Moreover, consistent with H1, participants significantly overestimated others' negative affect and negative emotions (all means were significantly greater than an accuracy score of 0;  $t_s(169) > 8.47, p < .001$ ). Overall, people overestimated others' negative experiences from being excluded online.

In study 2, we test H1 and H2a by randomly assigning 153 participants to a condition in a 2 (personal exclusion: excluded or accepted) x 2 (medium: online or FTF) x 2 (perspective: self or other) design. As in study 1, participants first played Cyberball (the personal exclusion manipulation). Afterwards, they read four scenarios, which varied in medium and perspective. Specifically, half of the scenarios were exclusionary by either actively rejecting or passively ignoring the target. The other two scenarios were negative control situations. After reading each scenario, participants completed the same items used in study 1.

A 2 x 2 x 2 x 2 (scenario: exclusion vs. non-exclusion) mixed-design ANOVA revealed a significant interaction of medium x perspective x scenario for negative affect,  $F(1,145)= 10.61, p=.001$ . Because we found such an effect, we followed up with 2 x 2 x 2 ANOVAs for each scenario type. Within the exclusion scenarios, we found a significant interaction of medium x perspective for

negative affect,  $F(1,145)= 4.01, p=.047$ . Consistent with study 1 and H1 that participants' overestimate others' pain when socially excluded online, predictions of negative affect were higher when participants predicted others' experience online ( $M=5.11$ ) than their own ( $M=4.58$ ;  $F(1,145)=3.08, p=.08$ ). This effect was not significant in the FTF conditions, where the effect slightly reversed, reflecting a slight empathy gap ( $M_s=5.51$  vs.  $5.20, F(1,145) < 1$ ). Moreover, this pattern was unique to the exclusion scenarios ( $F_s(1,145) < 1.41, p_s > .24$ ).

Consistent with H2a, the results also revealed that in general, participants expected exclusion to be worse (for themselves and others) when it occurred FTF than online. Specifically, within the exclusion scenarios, those in the FTF (vs. online) condition felt more negative affect ( $M_s = 5.36$  vs.  $4.84; F(1,145)=5.91, p=.016$ ), felt more rejected ( $M_s=5.74$  vs.  $5.06; F(1,145)=9.68, p=.002$ ), felt more ignored ( $M_s=5.29$  vs.  $4.64; F(1,142)=9.19, p=.003$ ), and felt sadder ( $M_s=5.31$  vs.  $4.91; F(1,143)=3.69, p=.057$ ). We did not find significant medium main effects for the other emotions ( $F_s(1,145) < 1.25, p_s > .26$ ). Overall, these results show that social exclusion is deemed worse in FTF than online settings.

In study 3, we test H2b by randomly assigning 360 MTurk participants to a condition in a 2 (perspective: self or other) x 2 (medium: online or FTF) x 3 (ad: cyberbullying, in-person bullying, or pollution) design. Using a social exclusion writing task adapted from prior research (Lee & Shrum 2012), participants recalled a time in which they were personally excluded or observed a person being excluded (the perspective manipulation) either online or in person (the medium manipulation). Afterwards, in an ostensibly different study, participants viewed one of three ads against cyberbullying, bullying in schools, or pollution. Finally, participants answered a battery of questions about how likely they would be to help the cause.

Supporting H2b, a 2 x 2 x 3 ANOVA yielded a significant medium main effect for likelihood to visit the ad's website,  $F(1,348)=8.13, p=.005$ , where participants were more likely to visit the ad's website when they recalled a FTF than an online exclusion event ( $M_s=3.90$  vs.  $=3.28$ ). Participants were also more willing to volunteer time when they recalled a FTF than online exclusion event ( $M_s=3.60$  vs.  $3.14 F(1,348)=4.30, p=.039$ ). For monetary intentions, FTF (vs. online) exclusion significantly increased monetary intentions in the other ( $M= 3.03$  vs.  $2.32, F(1,348)=3.66, p=.057$ ), but not the self-condition ( $M=2.80$  vs.  $2.94, F(1,348)<1$ ).

Across three studies, these results suggest that the medium of social exclusion plays an important role in people's beliefs about how negative the experience is and their receptiveness to social causes.

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### ***Finding vs. Receiving: How Content Acquisition Affects Sharing***

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Despite the immense popularity of online sharing (e.g., emailing of news stories to others, posting of Youtube videos), relatively little is known about what precipitates sharing of content. Recent research has started to examine how content characteristics (e.g., positivity, arousal, usefulness, etc.) affect sharing (e.g., Berger and Milkman 2012; Chen and Berger 2013).

Another way content may differ, however, is how it is acquired. People often discover content themselves (e.g., reading different websites), but they also receive content from others (e.g., through email or other forms of communication). Might acquisition mode (i.e., finding vs. receiving) affect people's subsequent sharing behavior, and if so, why?

We suggest that one way acquisition mode impacts sharing is by affecting how people evaluate the content. When people receive content from others, they process the articles objectively and share interesting content more than boring content. However, when people find content themselves, a mere ownership effect (Beggan 1992) occurs in which people associate the found content with themselves and thus positively evaluate most content. In other words, the act of finding content can make people blind to the underlying characteristics of content and that this may lead people to share undesirable content such as boring articles. We test these ideas in a series of studies and show that the act of discovering content makes people less discriminant.

In study 1, participants were randomly assigned to either receive or find an article that had been pretested to be either interesting or boring. Participants in the receiving conditions were told that someone had sent them an article and those in the finding conditions were told that they had found an article themselves. Then they were then given the title of a boring or interesting article (pretested) and were asked to indicate (1) how likely they would be to share the article and (2) how interesting they found the article. Results show that the likelihood of sharing and perceived interestingness were both affected by a significant interaction between acquisition method and content interestingness. While receivers were more likely to share the interesting than the boring article, finders were equally likely to share the two. This is driven by perceived interestingness: receivers were able to discern the boring article as less interesting than the interesting article and thus were less likely to share the boring article. Finders on the other hand were unable to discern the boring article as less interesting than the interesting article and as a result, finders were equally likely to share the boring and interesting articles.

The goal of study 2 is to replicate the results of study 1 in a more realistic setting. A 2 (finding vs. receiving) x 2 (interesting vs. boring article) between-subjects design was again used with two important changes. First, instead of seeing only the article title, participants received abridged versions of the actual articles. Second, rather than being told that they had “found” an article, finders went through the motions of actually finding an article. They clicked through a number of filler “articles” (pages where the message “imagine an article here” was displayed) until they hit the focal article. There, an article pretested to be either interesting or boring – and no additional instructions – was displayed on the screen. After seeing the article, participants indicated (1) how likely they would be to share the article and (2) how interesting they found the article. Results are consistent with that of study 1.

While these results are supportive, one could argue that these results are not driven by finders being blind to the characteristics of the content but rather receivers being unduly critical of content (e.g., evaluate boring content as extremely boring). To test this possibility, in addition to finding and receiving, we added a 3<sup>rd</sup> (control) condition. Those in the control conditions were merely provided an interesting or a boring article and were asked to indicate their likelihood of sharing the article and how interesting they found the article without finding or receiving instructions. Results of the finding and receiving conditions replicate those of the previous studies: receivers were less likely to share the boring article than the interesting article because they perceived the boring articles as not very interesting whereas finders were equally likely to share the two because they were blind to content interestingness. Importantly, the results of the control conditions mirror that of the receiving conditions. This shows that our results are not driven by receivers being excessively critical, but rather finders are unable to judge the underlying characteristic of the content.

In our last study, we looked at the role of self-esteem. If blindness to content interestingness (e.g., thinking boring content is interesting) is driven by the mere ownership effect as we have proposed, then this effect is likely weaker in those who are low in self-esteem since they evaluate themselves less favorably and are less likely to inflate evaluation of things associated with the self. To examine this, we ran a 2 (finding vs. receiving) x 2 (interesting vs. boring article) between-subjects study where we measured participants’ implicit self-esteem by looking at their preference for their own initials (Bosson, Swann Jr., and Pennebaker 2000). Results show that as finders become higher in self-esteem, their ability to discriminate between boring and interesting articles decrease and they are more likely to share the boring article. The same results did not hold for receivers.

Across four studies, we show that *how* people acquire content affects their subsequent sharing behavior by affecting how they evaluate the content. Finders are less attuned to the underlying characteristics of content than receivers and they subsequently may share content that are undesirable or low in quality (e.g., boring). While recent work has looked at how content characteristics precipitate sharing, this work examines a unique and unexplored component of the word of mouth process to show that it's not just *what's* in the content that affect sharing, but *how* content is acquired that can have downstream effects on word of mouth propagation.

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***Let's Get Closer: Feelings of Connectedness From Goals and Motivations for Using Social Media with Implications for Consumer Well-Being and Brand Outcomes***

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Social media holds great potential for meeting people's fundamental need to connect with others and these connections are likely to have important implications not only for consumer well-being, but also for brands' social media marketing efforts. However, is this potential realized? Previous literature seems equivocal on this point. For example, some research has shown that social media use may isolate people from healthy social activities, increasing loneliness and decreasing well-being (Kross, et. al. 2013), while others have argued that social media use contributes to the formation and maintenance of social capital (Mathwick, Wiertz and Ruyter 2008) and enhances self-esteem (Wilcox and Stephen 2013).

We adopt the needs-as-outcomes approach from self-determination theory (Sheldon 2011) to examine how different types of behaviors interact with different motivational orientations to produce feelings of connection in social media. We differentiate between two types of goals: more social goals have a primary focus on interacting with other people while using social media (e.g. commenting on friends' posts), and less social goals have a primary focus on using social media for some reason other than interacting with other people (e.g. checking out trending topics). We also differentiate between two important types of motivations (Deci and Ryan 2000): intrinsic motivation (doing something for its own sake) and the type of extrinsic motivation called introjected motivation (doing something for approval from self and others).

Studies 1 and 2 used a correlational approach to test that when pursuing more social goals, higher intrinsic motivation would be associated with higher relatedness (H1) and that when pursuing less social goals, higher introjected motivation would be associated with higher relatedness (H2). In study 1, our 338 participants described five social media goals and rated the goals on relatedness, and intrinsic motivation and introjected motivation. Goals were coded as more social or less social by two independent judges ( $k = .865$ ). Multilevel linear model results of the two-level hierarchical data showed that when pursuing more social goals, feelings of relatedness increased as intrinsic motivation increases ( $b = .175, p < .001$ ), supporting H1. Similarly, when pursuing less social goals, feelings of relatedness increase as introjected motivation increases ( $b = .351, p < .001$ ), supporting H2.

Study 2 replicated the interaction effects and extended the generalizability with 464 participants asked to describe a social media goal and then code their behavior as more social or less social. When pursuing more social goals, feelings of relatedness increased as intrinsic motivation increases ( $b = .426, p < .001$ ), supporting hypothesis H1. When pursuing less social goals, feelings of relatedness increase as introjected motivation increases ( $b = .443, p < .001$ ), supporting hypothesis H2. We also measured self-enhancement and

results showed that intrinsic motivation ( $b=.095$ ;  $p=.029$ ) and introjected motivation ( $b=-.068$ ;  $p=.084$ ) both moderate the prediction of self-enhancement from goal type: introjectedly motivated less social goals have a level of self-enhancement that is equivalent to intrinsically motivated more social goals.

In study 3, we compared feelings of relatedness *across* different types of motivation within each goal type, predicting that when pursuing more social goals, intrinsic (vs. introjected) motivation would lead to higher relatedness (H3), and when pursuing less social goals, introjected (vs. intrinsic) motivation would lead to higher relatedness (H4). Higher relatedness is experienced by a process in which one's focus is on others as opposed to the self (H5). For intrinsically motivated more social goals this process is activated implicitly through stimulation of the social context, and for introjectedly motivated less social goals this process is activated by an internalized request to consider others (Zhang and Epley 2012).

In a 2 (more vs. less social) x 2 (intrinsic vs. introjected motivation) between-subjects design, 205 participants in study 3 responded to a scenario describing a goal-by-motivation combination. Aron, et al.'s (1992) IOS scale measured the process. For more social goals, relatedness was higher for intrinsic motivation ( $M_{\text{intrinsic}}=3.579$ ) than for introjected motivation ( $M_{\text{introjected}}=3.031$ ,  $p=.013$ ), supporting H3. For less social goals, relatedness was higher for introjected motivation ( $M_{\text{introjected}}=3.320$ ) than for intrinsic motivation ( $M_{\text{intrinsic}}=2.755$ ,  $p=.014$ ), supporting H4. Moderated mediation showed that IOS completely accounted for the boost in relatedness due to both intrinsically motivated more social goals ( $b=.370$ , bias corrected 95% bootstrap CI=(.181, .633), and introjectedly motivated less social goals ( $b=-.200$ , bias corrected bootstrap 95% CI=(-.414, -.029), supporting H5.

In study 4, our 158 participants in a 2 (more vs. less social) x 2 (intrinsic vs. introjected motivation) between-subjects design responded to a Facebook brand page scenario. Consumers felt more related to the brand when introjectedly motivated to perform the less social task compared to when they were intrinsically motivated ( $M_{\text{introjected}}=2.693$ ,  $M_{\text{intrinsic}}=2.114$ ;  $p=.009$ ) and also felt more related to the brand when intrinsically motivated to perform the more social task compared to when they were introjectedly motivated ( $M_{\text{intrinsic}}=2.602$ ,  $M_{\text{introjected}}=2.149$ ;  $p=.041$ ). When the brand task was less social, introjectedly motivated consumers were more interested in learning more about the brand and visiting its Facebook page ( $M_{\text{introjected}}=3.00$ ,  $M_{\text{intrinsic}}=2.423$ ;  $p=.042$ ), more likely to share brand content and recommend the brand ( $M_{\text{introjected}}=2.501$ ,  $M_{\text{intrinsic}}=1.976$ ;  $p=.054$ ), and more willing to be contacted by the brand with special offers and agree the brand's Facebook page might influence purchase ( $M_{\text{introjected}}=2.829$ ,  $M_{\text{intrinsic}}=2.207$ ;  $p=.020$ ). When the brand task was more social, the effects reversed. Intrinsically motivated consumers displayed more brand interest ( $M_{\text{intrinsic}}=3.085$ ,  $M_{\text{introjected}}=2.408$ ;  $p=.017$ ) and stronger word-of-mouth effects ( $M_{\text{intrinsic}}=2.439$ ,  $M_{\text{introjected}}=1.803$ ;  $p=.020$ ).

Across four studies, we show support for dual and contrasting predictions about how people may feel closer to others, and brands, in social media. Further, these feelings of brand connection translate into more positive brand-related marketing outcomes. That intrinsic motives for more social interactions can increase consumers' feelings of connections is not surprising. Our finding that introjected motives for less social interactions can also lead to positive feelings has important implications for both scholarly research and marketing practice.

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### ***How Pinning Nordstrom Means Buying Macys: The Relationship of Social Media, Self-Concept, and Consumption Behavior***

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Despite increasing interest in understanding how people use and consume content in social media, little research has examined (i) how consumers represent their identities socially to others in social media, (ii) how they use brands to do this, (iii) and how these online behaviors affect consumers' offline purchase intentions and consumption behaviors. Consumers use brands and products as a way to affiliate with desired reference groups (Bearden and Etzel 1982). For example, to affiliate with an aspirational reference group, consumers often utilize aspirational brands (i.e. luxury brands) to signal their self-concept as these brands are associated with the valued or respected groups (Berger and Ward 2010). Now, in an age of social media, consumers can affiliate with brands online. Social media has been shown to fulfill a variety of social needs such as self-expression and self-presentation (Gosling, Gaddis, and Vazire 2007).

The current research examines the phenomenon of consumers using social media to interact with brands as a means of identity signaling but without actual purchasing or consumption. If social media provides a platform that allows for the fulfillment of certain identity needs such as self-expression and self-presentation, we hypothesize that affiliating oneself with brands and products that represent one's aspirational self (vs. one's actual self) enables expression of ideal self-concepts to others. We further posit that a consequence of this is that consumers who use social media to express their ideal self-concepts will be less likely to intend to purchase or consume aspirational/luxury brands (that would otherwise provide a similar identity-signaling opportunity in an offline environment). Two studies examine this.

Study 1 examines how consumers present their actual versus ideal selves on social media, and how this impacts purchase intent at everyday versus high end stores. M-Turk participants (N=149) listed fifteen retailers that fit into three categories: stores they actually shop at, stores they occasionally shop at for special occasions, and stores they consider luxury and do not or rarely shop at. Next, in a seemingly unrelated study, participants looked at a mocked-up social media "board" similar to what would be found on Pinterest.com (i.e., a visual "curation" of products) that they were told to imagine visualized either their actual-self or their ideal-self (the only difference in the boards was the title). Afterwards, participants were shown a list of stores (all fifteen that they had previously listed), and were asked to indicate which stores they would shop at if given the opportunity. Participants' interaction (visualizing and describing 1 item from the board) with the social media board was intended to simulate the effects of these individuals interacting with their own social media boards. Therefore, we hypothesized that participants that interacted with an ideal-self board would choose to shop in fewer luxury stores compared to those who looked at boards intended to represent their actual-self. A multivariate Tobit regression on the ratios of stores in one of the chosen three categories, over the other types of stores found significant main effects for self-image on the ratio of luxury stores chosen compared to everyday stores chosen (all  $p$ 's < .035). For example, participants who looked at ideal-self boards had lower intentions to shop at luxury stores ( $M=.25$ ) than participants who looked at actual-self boards ( $M=.34$ ).

Study 2 involved participants' real social media accounts, unlike Study 1 which used mocked-up social media Pinterest-style "boards." Specifically, this study assessed lay beliefs versus real social media self-expression on purchase intent with a 2 (self-concept: actual, ideal) x 2 (Pinterest Board Viewed: self, other) between-subjects design. In the self-condition, participants were asked to log into their own Pinterest account and to view one of their boards that featured products that they felt represented their actual or their ideal selves. In the other condition, participants viewed a Pinterest board of someone else that purportedly represented the other person's actual or ideal self. Finally, in an "unrelated" study, all participants were shown a visual map of a regional mall that included well-known mass-market and luxury retailers. Participants indicated which stores in the mall they (self-condition) or the other person (other condition) would shop at if given the opportunity. We expected participants in the other condition to indicate a lay theory that people who represent themselves in a more ideal (vs. actual) manner on Pinterest would be more likely to shop at luxury stores. Counter to this and consistent with Study 1, we expected participants in the self-condition, however, to be less likely to want to

shop at luxury stores when they viewed one of their own Pinterest boards that they believed represented their ideal self. These predictions were confirmed with a Tobit regression in which we analyzed the ratio of luxury stores chosen to the number of mass-market stores chosen. We found a significant interaction between the manipulated factors ( $b = -0.291$ ,  $t(82) = -3.30$ ,  $p = .001$ ). Specifically, when participants looked at another user's ideal-self board, they believed they would shop at more luxury stores ( $M = .70$ ) than when they looked at their own ideal-self boards ( $M = .34$ ).

Taken together, these two studies indicate that how people represent themselves online in social media through broadcasting their preferences for various brands and products can impact their offline purchase intentions. Interestingly, representing one's ideal self-concept in social media appears to lead to lower intentions to purchase aspirational luxury brands offline. This is despite consumers' lay belief that there is a positive correlation between how one represents themselves online and their offline purchase intentions. As a next step, we are currently working on a study that attempts to understand the mechanism underlying this effect. We posit that the effect is mediated by psychological ownership, mental simulation, and imagery.

To our knowledge, there have been no studies that have tried to link social presentation on social media sites and actual consumption of brands. This set of studies represents a first attempt to consider how different consumer identities can impact store preference (luxury v mass-market) based on how one is representing themselves online (in an actual or idealized way).

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## ***Individual Papers: Consumer Responses to Prices***

### ***Beware the Bundle: When Consumers Pay Less, Yet Demand More***

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Products and services can be aggregated and sold as bundles or disaggregated and sold separately. Preferences should nevertheless be unaffected by these mere differences in framing (Tversky, Sattath, and Slovic 1988).

We suggest that they are, however—and we offer a framework to predict when and why the “whole” of a bundle can either be greater than or less than the sum of its constituent parts. Specifically, we propose that consumers offer *lower* willingness-to-pay (WTP) for items acquired as a bundle, as compared to the same items purchased separately. For losses, the opposite pattern holds: When an item is subtracted from a bundle, as compared to lost separately, consumers will demand *more* compensation and experience greater dissatisfaction. For example, consumers purchasing a smoothie will offer lower WTP for extra ingredients (e.g., vitamins, caffeine, etc.) packaged as a bundle, compared to those presented separately—yet, at the same time, they will demand more compensation for the unavailability of an ingredient obtained as part of a bundle, as opposed to purchased separately.

This hypothesized asymmetry in valuation (i.e., paying less, yet demanding more) persists because consumers experience bundles as distinct, singular entities. Thus, in acquisition, consumers expect to pay less when acquiring *one* unit (i.e., the bundle), as compared to acquiring *multiple* units (i.e., the discrete components of the bundle). However, because the gestalt of a bundle *feels* greater than the sum of the parts, when losing an individual component, consumers suffer not only the loss of the item itself, but also the dissolution of the complete package—the “whole,” so to speak—and, hence, demand greater compensation.



We tested these predictions across three experiments:

Experiment 1 employed a 2 (scenario: *add* vs. *lose*)  $\times$  2 (framing: *bundled* vs. *separate*) between-subjects design, with 232 participants from a national online pool. In the *add* scenario, participants considered purchasing a fruit smoothie, to which they could add three “blenders” (e.g., vitamins, caffeine, etc.). Those in the *separate* condition provided WTP responses for the “blenders” separately, while those in the *bundled* condition provided a single WTP response for a bundle of all three “blenders.” As predicted, those in the *separate* condition offered higher total WTP ( $M = \$1.83$ ) than those in the *bundled* condition ( $M = \$0.71$ ;  $p = .007$ ).

In the *lose* scenario, those in the *separate* condition imagined having purchased the “blenders” separately, while those in the *bundled* condition imagined having purchased the “blenders” as a bundle. Participants were subsequently told that one of the “blenders” was unavailable and then determined what total refund amount they deserved. As predicted, those in the *bundled* condition demanded a larger refund ( $M = \$2.48$ ) than those in the *separate* condition ( $M = \$2.10$ ;  $p = .031$ ).

Experiment 2 was designed to conceptually replicate Experiment 1 in a different domain, with a different population. Additionally, Experiment 2 required participants to consider only *additional* compensation, above and beyond reimbursement, to further isolate differences in dissatisfaction.

Experiment 2 employed a 2 (scenario: *add* vs. *lose*)  $\times$  2 (framing: *bundled* vs. *separate*) between-subjects design, with 214 participants recruited on the University of Chicago campus and at a nearby Chicago museum. In the *add* scenario, participants evaluated a cruise vacation and three activities that could be added to the trip (e.g., spa, snorkeling, etc.). Those in the *separate* condition provided WTP responses for the activities separately, while those in the *bundled* condition provided a single WTP response for a bundle of all three activities. Again, as predicted, those in the *separate* condition offered higher total WTP ( $M = \$123.72$ ) than those in the *bundled* condition ( $M = \$97.81$ ;  $p = .041$ ).

In the *lose* scenario, those in the *separate* condition imagined having purchased the activities separately, while those in the *bundled* condition imagined having purchased the activities as a bundle. Participants were subsequently told that one of the activities was unavailable and then determined what additional compensation, above and beyond reimbursement, they deserved. Again, as predicted, those in the *bundled* condition demanded greater additional compensation ( $M = \$49.38$ ) than those in the *separate* condition ( $M = \$36.67$ ;  $p = .044$ ).

Experiment 3 extended the pattern of results to a third domain and, by measuring anticipated (un)happiness, provides additional evidence for the psychological process underlying the experience of losing items from a bundle.

In Experiment 3, which employed a 2 (scenario: *add* vs. *lose*)  $\times$  2 (framing: *bundled* vs. *separate*) between-subjects design, 180 participants from a national online pool imagined placing a takeout order for a three-course dinner (i.e., appetizer, entrée, and dessert). Those in the *add* condition offered their WTP for the dessert, while those in the *lose* condition determined what total refund amount they deserved after the dessert they ordered was unavailable upon pickup. The dessert was either added *separately* (i.e., after selecting an appetizer and entrée) or as part of a *bundle* (i.e., after selecting an appetizer-entrée bundle, upgraded to include dessert). Finally, participants assessed how happy they would be with their meal.

As predicted, those in the *separate* condition offered higher total WTP for the dessert ( $M = \$4.74$ ) than those in the *bundled* condition ( $M = \$2.90$ ;  $p < .001$ ). When the dessert was unavailable, however, those in the *bundled* condition demanded a larger refund ( $M = \$10.83$ ) than those in the *separate* condition ( $M = \$8.67$ ;  $p = .006$ ). Critically, when the dessert was unavailable in the *bundled*

condition, participants were less happy with their meal ( $M = 4.92$ ) than when the dessert was unavailable in the *separate* condition ( $M = 5.62$ ;  $p = .008$ ), suggesting that losses from a bundle are psychologically more painful than losses in isolation.

In short, we find that consumers systemically offer higher WTP when items are separated, as compared to bundled. Despite maintaining lower WTP for bundles, however, consumers nevertheless demand more compensation and experience greater dissatisfaction when facing losses in these contexts (a counterintuitive pattern in light of prospect theory; Kahneman and Tversky 1979). Bundling can be seen as a double-edged sword, therefore: Consumers pay less, yet demand more.

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### ***Deal or No Deal? Effects of Numerical Roundness on Willingness to Accept an Offer in Negotiation***

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Negotiations occur everywhere, especially in business. One convergent finding in the behavioral literature is that negotiators should make precise (vs. imprecise) offers because they lead to higher transaction prices. For example, [Thomas, Simon, and Kadiyali \(2010\)](#) found that participants felt more uncertain when they saw large, precise prices. This feeling of uncertainty leads people to rely on the “precise = small” heuristic, and consequently to negotiate less. And [Janiszewski and Uy \(2008\)](#) showed that the difference between the listing price and the final transaction price of homes was smaller when the listing price was precise than when it was imprecise. The explanation is that in the negotiation process, buyers used the listing price as an anchor, adjusting less from a precise number compared to a round one.

The present research, however, shows that when the goal is to close a deal, people should use round numbers because negotiators are more willing to accept (WTA) round rather than non-round offers (H2), and they also feel more satisfied if the final price is round versus non-round (H3). These effects are a consequence of the association between numerical roundness with the feeling of completeness (H1).

There are several reasons why individuals associate numerical roundness with the feeling of completeness (H1). First, round numbers are usually the last in a series of numbers, functioning as the boundary of numerical categories ([Isaac and Schindler 2014](#)). This tendency leads athletes (e.g., baseball players) to work hard to reach a round number at the end of the season ([Pope and Simonsohn 2011](#)). In contrast, non-round numbers are often associated with incompleteness. Consider one type of non-round number: a fraction. The word “fraction” came from Latin *fractus*, which means “broken.” Contrary to completeness or wholeness, a fraction represents a part of a whole. The connection between round numbers and completeness is also evidenced when viewed from a linguistic perspective. For example, round numbers in Chinese are called “zheng3 shu4,” which literally means “complete numbers”. In English the word “round” has several meanings that are closely related to completeness, including brought to satisfactory completion or perfection.

The link between numerical roundness and completeness has two important implications for negotiations. First, we predict that negotiators are more likely to accept a round rather than a non-round offer (H2). In typical circumstances, knowing when to close a negotiation is often ambiguous or arbitrary. A round offer thus serves as a cue by increasing the accessibility of “closure”, and “completeness”.

Now we turn to the question of how round versus non-round numbers may impact negotiators' satisfaction (H3). In a recent study, [Gu, Botti, and Faro \(2013\)](#) found that the feeling of psychological closure, triggered by metaphorical acts like covering or turning a page, increased participants' satisfaction with the decision process and outcome. The authors explained that the act of closure serves as a psychological boundary that prevents consumers from engaging in unfavorable comparisons between the selected and the rejected alternatives. By similar logic, because the negotiation process is often associated with unpleasant emotions such as anxiety ([Rosette, Kopelman, and Abbott 2013](#)), and anger ([Adam, Shirako, and Maddux 2010](#)), we propose that a round versus a non-round price will be more effective in creating a sense of closure that separates the unpleasant bargaining process from the current feeling, increasing negotiators satisfaction with the deal.

Study 1 involved two scenarios, and provided support to H2. Participants (n=178) were asked to imagine being the director of a hotel who was negotiating the coffee price with a potential vendor. After bargaining for the price in several rounds, the vendor representative offered a price of \$9.87 (\$10.00, or \$10.13) per pound. In the second scenario, participants imagined bargaining with a car dealer. As dependent variable, for each scenario, participants were asked to indicate whether they would accept the offer or not. The results of a Chi-square test for the coffee scenario yielded a significant difference across conditions ( $\chi^2(2)=9.87, p < .007$ ). Follow-up analyses revealed that, as predicted, participants in the round condition (25/58 or 43%) were more likely to accept the offer than those in the non-round-below condition (16/62 or 26%;  $\chi^2(1)=3.99, p < .05$ ), and non-round-above condition (10/58 or 17%;  $\chi^2(1)=9.21, p < .002$ ). In addition, we observed no significant difference between the two non-round conditions ( $\chi^2(1)=1.30, p = .26$ ). The car scenario results replicated the same pattern and were also statistically significant.

Studies 2 and 3 offered evidence for the underlying process (H1). Specifically, Study 2 employs an Implicit Association Test ([Greenwald, McGhee, and Schwartz 1998](#); [Greenwald, Nosek, and Banaji 2003](#)) to show that participants (n=91) associate round numbers with completeness. IAT scores ranged between -.49 to 1.35, with a mean ( $M=.74, SD=.42$ ) being significantly greater than zero ( $t(85)=16.40, p < .001$ ).

In Study 3 we assessed the mediating role of perceived completeness in driving the effects of numerical roundness on willingness to close a deal. Participants (n=71) imagined selling a book on Craigslist, and after some bargaining a potential buyer was willing to offer \$30 (vs.\$31). Using the PROCESS macro by [Hayes \(2013\)](#) we found that the effects of offer roundness on WTA were driven by the feeling of completeness associated to round numbers, 95% confidence intervals excluding zero (.12 to .71).

The results of Study 4 (n=201) supported H3, showing that round offers lead to greater satisfaction with a closed deal ( $F(5,195)=2.17; p=.06$ ), and that this effect is caused by the symbolic meaning of completeness associated to round numbers, 95% CI excluding zero (.01 to .28).

This research contributes to three areas: negotiation, numerical information processing, and psychological closure. First, our findings supplement previous work by showing the "round number advantage." In addition, it also enriches the negotiation literature by examining negotiators' willingness to accept offers and their perceived satisfaction with the negotiation process, which haven't been examined yet. Second, we contribute to the growing literature on numerical information processing by proposing a new mechanism through which round (vs. non-round) numbers influence consumer decision. Finally, our findings also speak to the research on psychological closure by identifying numerical roundness as another determinant.

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## *Will Consumers Always Spend More When a Coupon Has a Larger Face Value? The Inverted U-Shaped Effects of Coupon Face Value on Consumer Spending Level*

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It is quite common that a coupon can be applied to one of several different products sold at different prices within the same product category. For instance, consumers may get a \$50-off coupon code with which they can buy any model of a certain Dell laptop computer series, within which the retail prices of different models depend on their configurations. Yet it is still under-researched how coupon face value influences consumer spending level in such a context.

Without losing generality, we can simplify consumer spending level to a binary choice between a high-price, high-benefit product and a low-price, low-benefit product. On one hand, a budget-increase perspective suggests that consumers should be more likely to choose the high-price option as the face value of a coupon increases because in the meantime consumers' spending limit also increases (Heilman, Nakamoto, & Rao, 2002). On the other hand, a relative-processing perspective suggests that people often engage in relative processing when they evaluate coupons and tend to choose the product that is associated with the largest relative saving percentage (Tversky & Kahneman, 1981). As coupon face value ( $C$ ) increases, the relative saving percentage ( $R$ ) related to choosing the low-price option ( $P_L$ ) versus the high-price option ( $P_H$ ;  $P_H > P_L$ ) also increases ( $R = C/P_L - C/P_H = C(P_H - P_L)/P_L P_H$ ; thus,  $R$  increases with  $C$ ). Consequently, the attractiveness of choosing the low-price option should increase with coupon face value.

We propose that the relative influences of these two opposing forces vary as coupon face value increases. When the face value of a coupon only takes up a small portion of potential spending, the relative saving percentage related to coupon redemption is not salient enough to propel consumers to engage in relative processing (Gupta & Cooper, 1992). Thus, the face value of a coupon will influence consumers' spending level mainly through the budget-increase mechanism. In contrast, when the face value of a coupon increases to a certain amount so that it takes up a large portion of consumers' potential spending, the relative saving percentage will become highly salient, propelling people to engage in relative processing and hence choose the low spending level that is associated with the higher saving percentage. Thus, we hypothesize that coupon face value should have an inverted U-shaped effect on consumer spending: consumer spending initially increases with coupon face value, but it starts to decrease after the face value reaches an amount that can take up a large portion of consumers' potential spending.

Study 1 ( $N = 950$ ) tested this hypothesis using field data from the restaurant industry. In restaurants, consumers can choose different combinations of dishes and drinks, and therefore the same coupon can be linked to different levels of spending. Since the dishes and drinks are consumed together, they can be regarded as parts of an integral product, making the focal context an ideal one for testing our hypothesis. Restaurant-level weekly sales were regressed on coupon face value, its squared term, and several covariates such price levels of participating restaurants. All the variables were log-transformed before the analysis. The regression analysis revealed a negative squared term of coupon face value ( $\beta = -.78$ ,  $t = -3.62$ ,  $p < .001$ ). Further analyses showed that restaurant-level sales initially increased with coupon face value, and the maximal value of restaurant-level sales appeared when the coupon face value was around one standard deviation below its sample mean. After that, a further increase in coupon face value started to decrease restaurant-level sales.

Study 2 ( $N = 162$ ) used a (Face value: \$5, \$20, \$35 vs. \$45) between-subjects design. Participants imagined that they got a coupon which can be used to buy one of two mobile hard drives (500GB/\$52.45 vs. 750GB/\$75.95) and indicated which one they would like

to buy. In a logistic regression analysis, the squared term of coupon face value was negative ( $B = -.36$ ,  $Wald = 4.86$ ,  $p = .03$ ; the results were similar regardless of whether the face value was coded as its true value or as 1, 2, 3, 4, respectively). When provided with a \$5-off coupon, 51.20% of participants chose the high-price option. The choice share of the high-price option increased to 80.50% when the face value increased to \$20. However, when the face value further increased to \$35 and \$45, the choice share of the high-price option decreased to 53.70% and 48.70%, respectively. These results supported the inverted U-shaped effect of coupon face value on consumer spending.

Study 3 ( $N = 161$ ) aimed to demonstrate that consumers' liking for the focal brand will moderate the effect of coupon face value. When consumers strongly like a brand, they may be more inclined to choose the high-price option regardless of the face value of the coupon they receive, so that the inverted U-shaped effect of coupon face value on consumer spending will disappear. Study 3 adopted a (Face value: \$5, \$10, \$15 vs. \$20) between-subjects design, with liking for the focal brand measured as the second factor. Participants imagined that they received a coupon which can be used to buy one of the two chocolate boxes that differed in flavor (16 pieces/\$28.89 vs. 18 pieces/\$38.98) and indicate which one they would like to buy. A logistic regression generated a positive second-order interaction between face value and brand liking ( $B = .26$ ,  $Wald = 4.84$ ,  $p = .03$ ). A spotlight analysis showed that when brand liking was at one standard deviation below its mean, the squared term of face value was negative ( $B = -1.56$ ,  $Wald = 5.59$ ,  $p = .02$ ), and the peak value of the choice probability of the high-price option occurred when the face value was between \$10 and \$15, replicating the results of Studies 1 and 2. In contrast, when brand liking was at one standard deviation above its mean, the inverted-U shaped effect disappeared.

Taken together, three studies demonstrate an inverted U-shaped effect of coupon face value on consumer spending and identify a strong liking for the focal brand as a boundary condition for this novel relationship.

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### ***The Satiating Effect of Pricing: The Influence of Price on Enjoyment over Time***

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Price conveys a variety of information to would-be-consumers of products. Although much prior research examines perceptions of a product's quality or expectations about its performance based on price, extant research has scarcely addressed the role of price in the enjoyment of a consumption experience over time. That is, how does the presence of price information influence consumers' satisfaction over the course of a consumption experience? In the present research, we seek to address how pricing affects enjoyment experienced from repeated consumption.

Specifically, we predict that exposure to prices will speed up satiation. We base this prediction on prior research showing that reminders of personal wealth may stunt the ability to savor pleasurable experiences (Quoidbach et al., 2010) and that putting a price on one's time increases impatience and therefore detracts from enjoyment (DeVoe & House, 2012). Indeed, we find in a series of five studies that compared to when no pricing information is available, the presence of prices leads to faster rates of satiation. Further, we demonstrate that it is not merely the amount of information or the presence or absence of variety provided that causes these effects, but rather, it is specific to prices.

In our first three studies, we used clips of the top Billboard songs to create a repeatable consumption experiences for consumers. We analyzed these three studies together to combine across various, but plausible, price levels. As such, in each of studies 1a-c, participants were randomly assigned to either a no price control group or a price present group. Participants ( $n = 680$ ) began by indicating their six most favored songs among 18 songs on the list of Billboard's top songs. Participants were then told they would listen to clips of five of these songs a total of 15 times, and rate how much they enjoyed each one as it was listened to. We customized the list of songs to be each participant's second through sixth highest ranked songs. This ensured everyone had a mix of songs they liked, but not a favorite song that might have a particular, special meaning.

Each participant was then informed that the study was interested in their evaluations of a new music service. They then heard a 30 second clip of the chorus of one of their songs and then rated how much their enjoyment of and desire to continue their listening experience. These served as measures of ongoing enjoyment that would let us gauge the rate of satiation. Participants continued listening to a clip and rating their enjoyment in alternation for a total of 15 randomly-ordered trials. For participants in the price present condition, they were shown one of a set of 3-4 different price points, which varied from study-to-study (ranged from \$.59 to \$1.39), but always remained constant for the same song within each study. Overall, we found that compared to a no price condition, participants seeing prices with each song satiated more quickly at all price levels (enjoying subsequent songs less) than did those in the no price control condition ( $\beta = -3.32$  vs.  $\beta = -2.75$ ,  $t(678) = 2.13$ ,  $p < .04$ ). Together, these three studies provide support for our general prediction that the presence of prices increases the rate of satiation, and not merely the initial enjoyment ( $M = 88.83$  vs.  $M = 87.25$ ;  $t < 1$ , *ns*). They also suggest that any effects are not due to changed perceptions of quality, which can influence the hedonic experience (Plassmann et al., 2008), as the size of the effect did not show any evidence of trending with the price level ( $t(678) = 0.06$ , *ns*).

In our second study ( $n = 150$ ), we sought to examine whether the mere presence of additional information provided in the price conditions increased satiation in the previous studies. As such, we included a third condition in which the weeks on the Billboard chart were present. We felt this was an appropriate foil, since it was (a) another piece of numerical information, and (b) also provided cues about quality. To make the conditions most comparable, the number of weeks corresponded to the prices (e.g., \$.99 was 99 weeks). Otherwise, the procedure was the same as in studies 1a-1c. Results revealed that participants given information about the pricing satiated faster ( $\beta = -4.04$ ) than participants given no information ( $\beta = -2.84$ ;  $t(145) = 2.13$ ,  $p < .04$ ), or given the weeks on the chart ( $\beta = -2.71$ ;  $t(145) = 2.39$ ,  $p < .02$ ). The rates of satiation did not differ between the latter two groups not given any pricing information ( $t < 1$ , *ns*).

In our third study ( $n = 102$ ), we wanted to ensure that the findings so far were not attributable to differences in perceptions of quality, considering prior research has shown that the presence of trivial variety (e.g., a changing price that is not actually paid) can increase liking and slow satiation (Redden, 2008; Kahn & Wansink, 2004). To rule this out, we employed an additional condition where participants received pricing information, but the price was exactly the same across all of the songs (equal to the average in the varying price condition). Results revealed that participants given no information about the pricing satiated slower ( $\beta = -2.71$ ) than participants given either the constant price ( $\beta = -4.25$ ;  $t(97) = 2.22$ ,  $p < .03$ ), or a varying price ( $\beta = -4.47$ ;  $t(97) = 2.59$ ,  $p < .02$ ). The latter two conditions receiving pricing information satiated at the same rate ( $t < 1$ , *ns*). As such, the same price condition replicated the effects of the varying price condition from this and all previous studies, underscoring that the mere presence of a price speeds satiation.

Overall, our findings unveil the impact of price on the rate of satiation consumers experience over the course of a consumption episode, adding to other recent research delving deeper into differential rates of satiation (e.g., Redden & Haws, 2013; Galak, Kruger, & Loewenstein, 2011), while simultaneously bringing attention to the effect that prices may have on consumers' perceptions and experiences. Ongoing studies seek to further examine the underlying mechanisms driving our effects.

## ***Individual Papers: What You do To Me: The Effect of Others***

### ***Mistaking Dissimilar for Dislike: Why We Mispredict Others' Diverse Preferences***

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We regularly encounter people who have a surprising combination of tastes: an acquaintance who usually vacations at a rustic lake house and spends the next on a wild trip to Vegas, or a colleague whose music collection includes hundreds of classical music performances and an equal number of Top 40 hits. Even in the celebrity sphere, surprising tastes are newsworthy: a US President who also loves painting portraits (Smith, 2013), or a heartthrob actor is a kitting enthusiast (Yahoo! News, 2013). Having observed others' preferences in one category, we're often surprised to learn that they have interests in entirely dissimilar things, as well.

But is this surprise warranted? After seeing what people choose, we not only make assumptions about how much they like the chosen options (Miller & Nelson, 2002), we also make broader inferences about how much they like (or dislike) unchosen ones. But how correct are these extrapolations? In this paper, we explore the (often erroneous) inferences people make about others' unspecified tastes—specifically, that people draw systematically different conclusions about unchosen options depending on how similar or dissimilar they are to a known choice. Simply put, people expect others to like similar items and dislike dissimilar ones: if people see that someone else chose a rustic lake vacation, they expect that person to like a similar trip destination (e.g., a trip to the mountains), but not to like a dissimilar one (e.g., Vegas). However, this stands in contrast to the fact that people readily possess dissimilar, heterogeneous tastes themselves—enjoying vacations to both the lake *and* the city, listening to both classical *and* pop. In six studies, we document when and why people mistake dissimilar for dislike, leading to a distinct prediction error with downstream consequences.

Study 1 demonstrates the basic effect: people mistakenly believe that others do not like items that are dissimilar from one another. Participants read about a consumer choosing between three vacation destinations: Lake, Mountain, or City—the first two were similar, whereas the latter was dissimilar. Participants learned about the consumer's preferences for a reference choice (lake)—either that she *chose Lake*, *ruled out Lake*, or were given *no information*—and then estimated how much she liked each of the three options. Participants estimated positively correlated liking levels for similar options ( $r=.56, p<0.001$ ), but negatively correlated levels for dissimilar options ( $r=-.42, p<0.001$ ), as though these dissimilar preferences were mutually exclusive. In contrast, when reporting their own preferences, people's own preferences for dissimilar options were far less polarized ( $r=-.10, p<0.054$ ). Thus, S1 begins to provide evidence that predictions and base rates are not aligned for dissimilar items.

Study 2 demonstrates the prediction error with a measure of dichotomous choice, shows that the prediction error is specific to dissimilar items, and varies product ratings to gauge (actual/predicted) tradeoffs between quality and similarity. In a 2 (perspective: *actors* vs. *observers*) x 2 (options: *similar* vs. *dissimilar*) set-up, participants either chose a movie genre for themselves (*actors*) or learned of someone else's choice (*observers*), as between two *similar* options (thriller/action adventure) or two *dissimilar* ones (thriller/documentary). Then participants had to make an “out-of-stock” tradeoff choice: a 3-star version of the chosen genre (e.g., 3-star thriller), or a 5-star version of the alternative (e.g., 5-star action adventure or 5-star documentary) genre. We predicted that for

themselves, most actors would rather have the higher-rated movie, regardless of genre; however, when predicting someone else's choice, we believed observers would correctly anticipate a tradeoff between similar items, but—mistaking dissimilar for dislike—would not predict a tradeoff between dissimilar ones. Indeed, when options were *similar*, most actors (74%) and observers (69%) chose the similar, higher-rated movie. However, when options were *dissimilar*, a significant gap emerged: most actors chose dissimilar, higher-rated movie (64%), but very few observers predicted that choice (18%;  $p < .001$ ).

Study 3 elucidates the process underlying the effect: mistaking dissimilar for dislike is fully mediated by a (false) belief that others' preferences are homogeneous. We replicated the same design as S2's dissimilar condition, having people make a tradeoff (for themselves or someone else) between a 3-star similar movie and a 5-star dissimilar one. In addition, we measured actual/perceived range of preferences; drawing on out-group homogeneity research (Judd, Ryan, & Park, 1991), we showed participants 14 movie genres and asked them to select all the ones they (*actors*) or someone else (*observers*) liked. The results show that people infer a narrower, more homogeneous range of preferences for others: while actors reported liking 7 movie genres, observers estimated that someone else only liked 4. This fully mediated the choice of dissimilar movie in the out-of-stock scenario.

Study 4 shows that the effect persists when predictors are financially incented to accurately predict others' preferences. Lab participants were partnered, assigned to be actors or observers. Actors chose between two dissimilar movies; observers learned of this choice. Both partners then encountered S2's trade-off choice: 3-star similar movie and a 5-star dissimilar one. Observers were promised a bonus for correct prediction. While most actors (69%) chose the higher-rated but dissimilar option for themselves, few observers (39%;  $p < .001$ ) predicted that choice, even when monetary incentives were at stake.

Study 5 shows that the effect is tempered by a manipulation designed to encourage participants to consider that others' preferences are varied (Critcher & Dunning, 2013). Again, participants predicted someone's choice between two dissimilar movies—but here, they either predicted one person's selection or estimated the distribution of 100 people's selections. Participants learned that 1 person (*single person*) or 100 people (*sample population*) had chosen a movie (thriller or documentary, counterbalanced), and then predicted a choice between a 3-star similar movie and a 5-star dissimilar one. For the *single person* condition, participants selected the choice they believed the other person made, while in the *sample population* condition, participants estimated how many of the 100 people chose 3-star similar and how many chose 5-star dissimilar. Replicating previous results, only 27.2% of participants predicted that a *single person* would choose the higher-quality, dissimilar movie; however, for *sample population*, observers predicted that 52.9% ( $SD = 23.32$ ) of others would choose the higher-quality, dissimilar movie, suggesting that the prediction error can be mitigated when thinking more globally.

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### ***Correspondent Inferences and Consumer Decision Making***

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People tend to make correspondent inferences when observing others. They infer stable personality characteristics from the behavior of others, and do so even when the presence of external factors severely constrain the range of possible behaviors that person might have exhibited. This general tendency leads observers to over-attribute behavior of actors to their enduring dispositions and under-weight the influence of situational factors, committing a correspondence bias (Ross, 1977; Gilbert & Malone, 1995; Jones,



1979; 1990; Jones & Harris, 1967). Correspondence bias and more general forms of correspondent inferences have been studied through the lens of the different attributions made by actors and observers such as attitudes, abilities, susceptibility to emotions, and morality (Gawronski, 2004).

We developed and validated an instrument that includes the different dispositional inferences (attitude, ability, emotionality, morality) assessed by the canonical four correspondence bias paradigms (Gawronski, 2004). In Study 1A (N = 150), we generated and tested numerous scale items drawn and cloned from existing items in the literature, describing an instance of behavior and asking respondents to rate their confidence in a dispositional explanation for that behavior. The items underwent a purification process resulting in a 10-item scale with sound psychometric properties. In Study 1B (N = 151), we verified the factorial structure of the scale demonstrating that the propensity to make correspondent inferences is a latent, unidimensional construct that induces people to be more confident in dispositional attributions when assessing the causes underlying different behaviors. In Study 2 (N = 773) we tested the discriminant validity of the scale and found that the propensity to make correspondent inferences is not merely one instance of generally poor decision making ability or a lack of intelligence, nor a function of individual processing style, preference for control, or attributional style. In studies 3-5 we tested the ability of the scale to predict consequential consumer behaviors.

In Study 3 (N = 200), we examined whether the propensity to make correspondent inferences predicts the amount of blame observers attribute to others (company employees or other consumers) who cause harm accidentally. We compared scenarios in which an actor was causing negligent or accidental harm, predicting that participants with a greater propensity to make correspondent inferences would be more likely to attribute blame to the actor even in the case of accidental harm as they should underweight the situational factors that contributed to it. The results show that participants characterized by a high propensity to make correspondent inferences were more likely to make dispositional attributions to employees and to other consumers for harmful events when the harm was due to the negligence of the agent. More interestingly, this relationship was even stronger when no harm was intended and the outcome was accidental—when participants should have discounted more for situational factors that contributed to harm having been caused. In Study 4 (N = 130) we examined whether the propensity to make correspondent inferences predicts the extent to which consumers incorporate dubious evidence into their judgments, using a mock jury verdict scenario in which a forced confession (vs. no confession) is presented as evidence. We expected that participants more prone to make correspondent inferences should be less likely to take into account the situational influences that may have yielded to the confession, and therefore be more likely to consider a forced confession as a relevant piece of evidence in forming their judgment. As a consequence, they should be more likely to consider a defendant who confessed to be guilty even when his confession was obtained under coercion and then withdrawn.

The results show that participants more prone to make correspondent inferences were more likely to incorporate dubious evidence in their judgments, as they were positively influenced by a coerced confession in rating the likelihood that the defendant was guilty. These participants were more likely to neglect the situational influences (i.e., the coercion) that may have induced the defendant to confess, and therefore may have used the forced confession as a relevant piece of evidence in forming their judgment. Participants less prone to make correspondent inferences showed the opposite effect, as they were less likely to consider the defendant guilty in the coerced confession condition than in the control condition.

In Study 5 (N = 201) we examined the effects of correspondent inferences on financial decisions, by testing whether the propensity to make correspondent inferences predicts attributions of credit for success and failure, and also influences incentive-compatible behaviors based on these attributions. Participants evaluated the performance of two fund managers whose fund either decreased in value but outperformed the market, or increased in value but underperformed with respect to the market. We expected that propensity to make correspondent inferences would predict the extent to which participants neglected the market performance (a situational factor) in their evaluations of the fund managers, their preferences between funds, and in a real incentive-compatible decision about the fund in which to invest bonus money received in the experiment.

The results show that participants more prone to make correspondent inferences were more likely to prefer the fund that increased in value but underperformed with respect to the market than the fund that decreased in value but outperformed the respect to the market, and they were more likely to actually invest their bonus payment in that fund. These results suggest that participants more prone to make correspondent inferences were more likely to make dispositional attributions for good and bad absolute performance and ignore the comparative value of those performances (a positive gain that was lower than the rise of the market and a loss that was less than the fall of the market) than participants less prone to make correspondent inferences. The consistency of this pattern across performance evaluations, preferences, and incentive-compatible choices provides evidence of the predictive validity of the correspondent inference scale and of its important consequences for decisions regarding investments and retirement planning.

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### ***Why We Defer to Others: Choice Delegation as a Means of Cognitive Closure***

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Choice delegation is a decision strategy in which individuals strategically forgo their freedom to choose by avoiding it (Dhar & Nowlis, 1999). Not surprisingly, this strategy manifests in a host of forms (e.g., relying on a prior decision, a recommendation, the status quo). Yet our interest is not in the unique aspects of these specific forms of delegation, but in their commonalities. In particular, the purpose of the present research is to offer a novel mechanism for individuals' desire to engage in these various means of choice delegation—specifically, the desire to resolve or achieve closure with a decision (Kruglanski & Webster, 1996).

The need for closure is defined as a desire to achieve resolution on a decision and encompasses the desire for a definite answer (Kruglanski 1989). Importantly, researchers argue that decision-makers who seek closure are motivated to reduce the tedious or bothersome nature of the decision (Kruglanski & Chun, 2008). Similarly, we suspect that individuals high in need for closure should fixate on choice delegation strategies as a means of achieving immediate choice resolution and thus relieving the bothersome feelings that stem from the decision. Furthermore, while avoiding decisions can stem from individuals' desire to avoid regret (see Anderson 2003), we posit the need for closure is driven by the motivation to reduce the bothersome nature of decisions and should thus be independent of regret.

Experiment 1 tested our primary hypothesis that individuals high (versus low) in need for closure are more inclined to engage in choice delegation—here, *delegation to a prior decision* (Mannetti et al., 2007). Participants' were initially exposed to a manipulation of need for closure (based on pretesting) in which they either agreed (*high closure* condition) or disagreed (*low closure* condition) with a series of six-items consistent with the need for closure. Afterward, participants were presented with information on two similarly priced vacation packages—a city and a beach vacation—and asked to choose one. Following their choice, participants were asked to make a second choice between their initial choice and a new vacation option. Specifically, those who initially chose the beach (city) vacation were presented with a separate beach (city) vacation package that in both instances was pretested to be more desirable than the initial vacations. This second choice served as our target decision. Analysis revealed only a main effect of closure ( $Z = -2.01, p = .044$ ), such that participants were more likely to delegate when high (versus low) in need for closure, irrespective of their initial preference for a beach or city vacation. Thus, the need for closure appears to enhance choice delegation—even at the expense of a more desirable option (i.e., the second option).

Experiment 2 tested the argument that those seeking closure view decisions as more bothersome, and this feeling of bothersome should drive the documented differences in delegation—here, *delegation to others* (Dhar & Nowlis, 1999). Participants’ need for closure was manipulated (based on pretesting) by reading a supposed research abstract outlining the positives of achieving closure in our decisions (*high closure* condition) or the positives of delaying closure in our decisions (*low closure* condition). They were then told to imagine shopping for a sound-system and, upon selecting a product, an associate approached them recommending a different, similarly priced, option. Participants were asked whether they would choose their preferred option or the recommended option, to rate how bothersome they found the decision to be, and how much regret they anticipated in making the decision. Analysis revealed a significant effect of closure on choice ( $\chi^2(1, N = 96) = 4.96, p = .026$ ) and bothersome ( $t(94) = -1.99, p = .049$ ); those high (versus low) in need for closure were more likely to delegate and find the decision as bothersome. There was no effect of regret ( $p > .23$ ). Additionally, we observed a significant mediating pathway from closure to choice through bothersome (controlling for regret) (95% CI: .02, .84). These findings suggest that the reliance of those seeking closure on delegation is restricted to contexts that are highly bothersome and independent of the desire to avoid regret.

Finally, Experiment 3 sought to demonstrate that those high in need for closure would exhibit less delegation if the bothersome nature of the decision was minimized—here, *delegation to the status quo* (Samuelson & Zeckhauser, 1988). Thus, participants received a standard or highly simplified restaurant menu for *The Standard*. Importantly, the menus only differed in structure, not content. To provide a status quo, the menu denoted one item as “The Standard Favorite.” Participants were asked to select their own entrée from the menu or *The Standard Favorite*. Finally, we measured participants’ need for cognitive closure (Webster & Kruglanski, 1994). Analysis revealed the predicted menu structure  $\times$  need for closure interaction ( $\beta = -1.95$ , Wald’s  $\chi^2 = 7.30, p = .007$ ). Those high in need for closure (+1 SD) were more likely to delegate after reading the control (versus simplified) menu ( $\beta = -1.77$ , Wald’s  $\chi^2 = 5.16, p = .023$ ). Those low in need for closure (-1 SD) showed no difference in delegation as a function of menu structure. By reducing the bothersome nature of the decision, then, those seeking closure were less likely to delegate. This finding bolsters support for the importance of bothersome in driving the delegation decision of those seeking closure.

Across well-established choice delegation strategies, we show that delegation is motivated by a need for cognitive closure (Experiment 1), driven by the bothersome nature of the decision (Experiment 2), and bound to decisions that are highly bothersome (Experiment 3). Furthermore, reliance on delegation occurred whether need for closure was manipulated (Experiments 1 and 2) or measured (Experiment 3), absent regret (Experiment 2), and at the expense of more optimal options (Experiment 1). Collectively, these findings support cognitive closure as a critical catalyst to individuals’ desire to avoid decisions through choice delegation.

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***The Product-as-Person Proxy Effect: Satisfying Social Needs via Consumer Products at the Expense of Interpersonal Interaction***

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Beginning with security blankets and teddy bears in childhood, human beings demonstrate a fundamental need for belonging that continues across the lifespan (Baumeister and Leary 1995). Although social needs are met primarily through contact with other people, we propose that consumer products can fulfill similar needs. If social needs can be fulfilled via consumption of tangible products, then such consumption could, paradoxically, serve as a detriment to developing and maintaining genuine interpersonal

relationships. As such, the primary objective of the current research is to explore how perceiving products in humanlike terms fulfills consumers' social needs and how that may, in turn, undermine interpersonal interactions.

The extent to which people substitute or supplement interpersonal interactions with product interactions is an issue warranting careful study. Prior research suggests the possibility of consumers developing relationships with nonsocial objects that mirror interpersonal relationships (Aggarwal 2004). Fournier (1998) identified brands as viable relationship partners where one party in the exchange is a person who receives significant social benefits. Further evidence indicates that individuals readily perceive objects as gendered (Guthrie 2007), brands as having personality (Aaker 1997), and brand-related characters as human (Rook and Levy 1999). Social exclusion may play a role in these findings, however, such that those who are craving human contact may more readily "see" people in their products. Research by Epley et al. (2008) shows that people who feel more chronically disconnected from others and lonely anthropomorphize more than those who feel more connected. Indeed, individuals who are well-integrated in their social networks are less likely to seek additional bonds relative to their more deprived counterparts (Baumeister and Leary 1995). In the present research, we propose the "product-as-person-proxy" hypothesis such that consumer products may serve as proxies for people with respect to fulfilling social needs.

Study 1 examined the relationship between humanized consumer products and actual human interaction compared to non-humanized consumer products. Participants were randomly assigned to write about a time they felt excluded by others (Social Exclusion condition) or about what they did yesterday (Control). Following the essay manipulation, participants reported their mood on a single scale measure ("What is your general mood right now?" -5 = very negative, to +5 = very positive). Following the mood rating, participants were presented with an ostensibly unrelated task. The cover story was that in accordance with STEM (Science, Technology, Engineering, and Mathematics) initiatives, researchers were interested in understanding how students solve math problems. Participants were randomly assigned to one of three conditions to complete a 10-question math test: Partner condition (working with a random partner in the lab), Humanized calculator condition (in which participants worked with an anthropomorphized calculator), and a Non-humanized (control) calculator condition (in which participants used a standard calculator to solve problems). Following the math test, participants again rated their mood on the single item scale, provided demographic information, and were debriefed. Results revealed that working with a humanized calculator and working with a real human partner restored mood following an experience of social exclusion, suggesting that humanized consumer products can, in some way, emulate effects of real interpersonal interaction on mood following an episode of social exclusion.

Study 2 further explored the relationship between humanized consumer products and social exclusion. Using a familiar, ubiquitous measure of one's social connection (number of Facebook friends), study 2 found that participants overestimate the number of friends they have on Facebook following an experience of social exclusion *unless* they are first provided the opportunity to engage with a humanized consumer product. As before, interacting with a humanized consumer product buffers the otherwise negative consequences of social exclusion.

Study 3 explored whether greater sensitivity to a humanized version of a product can reduce interpersonal interaction. Participants completed the essay task as before. Then participants were randomly assigned to one of two questions conditions: Humanized or Non-humanized (control). Both sets of questions included 10 items pertaining to the phone's design, sound, functionality, connectivity, user interface, camera, applications, battery life, alarm, and security. The difference was that questions in the Humanized condition were written with a deliberately humanized phrasing—e.g., "How would you rate the overall body and design of your phone (i.e., the body, the weight, the curves)?"—while questions in the Control condition were written with a deliberately neutral phrasing—e.g., "How would you rate the overall design of your phone (i.e., the case, the shape, the edges)?" Following these questions, participants estimated the amount of time per day they would spend talking to family and friends in the upcoming month.

Results indicate that socially excluded participants who were given humanized questions estimated they would spend *less* time on the phone than their socially excluded counterparts given non-humanized questions, an effect not attributed to mood. Thus, humanized consumer products can serve as a facilitative buffer for socially excluded individuals who then, subsequently, need less genuine interpersonal engagement to satisfy their social needs.

The final two studies tested whether this social cost extended beyond interpersonal interaction and into a different, but related, domain: prosocial behavior (cf. Tai, Zheng, and Narayanan 2011). Participants in Study 4 completed the same essay and cellular phone manipulations as Study 3 before responding to the key dependent variable, which was willingness to complete more studies for no additional compensation. In addition, participants completed an eight-question social assurance scale (Lee and Robbins 1995) to test the underlying process. Moderated mediation results supported our hypothesis: there was a significant indirect effect for social assurance among participants who responded to humanized questions, but not participants who responded to non-humanized questions. Thus, if socially excluded participants were able to fulfill social needs by construing a consumer product as humanized, then they were less willing to complete additional surveys. Study 5 replicated these effects using an alternative measure of prosocial behavior (i.e., charitable donations), a different measure of social need, and a non-verbal manipulation of a humanized consumer product.

Whether talking about their cars or beds, their homes or household items, consumers often talk about products using terms, constructs, and ideas typically reserved for interpersonal relationships. The present research demonstrated—for the first time—that consumer sensitivity to these humanlike qualities of products is greater when people are made to feel socially excluded or when the threat of unfulfilled social needs is activated. Moreover, at least in some instances, consuming a product perceived in humanized terms may come at the cost of genuine interpersonal interaction and prosocial behavior.

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## ***Individual Papers: Propection and Retrospection: Understanding how Consumer's Look Ahead and Look Back***

### ***The End of the “End” Effect: Endings Do Not Inherently Have More Impact on Retrospective Evaluations***

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The present article adds to the existing understanding of how the structure of an experience affects its overall evaluation, by reexamining one of the most basic findings in this area: the end effect. The end effect suggests that people’s retrospective evaluations are disproportionately influenced by the end of the experience (e.g., Fredrickson and Kahneman 1993). Although there have been many demonstrations of the end effect, prior research also has identified several boundary conditions under which the effect fails to obtain (e.g., Miron-Shatz 2009). In the current work, rather than examining boundary conditions, we revisit the basic effect to test if the end of an experience is in fact inherently over-weighted. While we certainly acknowledge that endings can have a disproportionate impact on retrospective evaluations, our findings suggest that this is not due to an inherent over-emphasis of the end of an experience, but rather because of specific additional properties of the end in certain settings.

In study 1, 303 participants listened to one of two sound clips of a vacuum cleaner noise. The clips were identical, but reversed in sequence, such that the ending was either softer (better-end) or louder (worse-end) than average. Participants in the better-end

condition ( $M = 6.93$ ) rated the end of the clip as significantly better than participants in the worse-end condition ( $M = 3.47$ ,  $F(1, 294) = 273.67$ ,  $p < .001$ ). In spite of this effective manipulation, participants in the two conditions did not differ in their overall irritation with the clip ( $M_{\text{BetterEnd}} = 6.69$ ,  $M_{\text{WorseEnd}} = 6.96$ ;  $F < 1$ ). Note that the sample size in this study was sufficiently large to detect a small effect (Cohen's  $d = .02$ ) with a probability of 93%. Thus, changing the ending of an aversive sound by re-arranging its parts did not change the retrospective evaluation of that sound, even in a sufficiently powered study with a highly effective manipulation. The remaining studies reconcile our inability to find an end effect in this study with previous demonstrations of the effect.

We first turned to previous demonstrations that retrospective evaluations of an aversive experience improve when a better (less aversive) end is added to it. We specifically tested whether this effect was due to an improvement in the average of the experience rather than an over-weighting of its final moments. Thus, in study 2, 260 participants were assigned to listen to one of three noise profiles: better-middle, better-end, and added-end. The better-middle and better-end sound clips were equally long but differed in whether a less aversive (i.e., better) segment was positioned in the middle versus at the end. The added-end sound clip was based on the better-middle clip, but extended it with an additional, less aversive segment at the end of the clip. Thus, the better-middle and the added-end clips differed in both average intensity and the intensity of the end (as in previous demonstrations), whereas the better-middle and better-end clips had the same average intensity and only differed in the intensity of the end. Replicating previous demonstrations, participants in the added-end condition ( $M = -0.10$ ) reported less irritation with the noise than participants in the better-end ( $M = 0.00$ ) and better-middle conditions ( $M = 0.11$ ,  $F(1, 220) = 4.43$ ,  $p = .036$ ). However, there was no significant difference in irritation between the better-middle and better-end conditions ( $F < 1$ ), indicating that the intensity of the end didn't matter when average irritation was held constant.

Study 3 (with 912 participants) conceptually replicated study 2 using positive stimuli by creating compilations of music. Since the overall experience was positive, we added a less enjoyable component to the experience for some participants, and varied the positioning of this component. Not surprisingly, participants in the control condition enjoyed the music compilation more ( $M = 6.76$ ) than did participants who had a less enjoyable part added, either to the end ( $M = 6.50$ ) or to the middle ( $M = 6.58$ ,  $F(1, 880) = 4.37$ ,  $p = .037$ ). There was no significant difference between the last two conditions ( $F < 1$ ). Thus, while adding a less enjoyable component lowered evaluations, the positioning of this component did not matter. In sum, studies 2 and 3 indicate that adding a better (or worse) end changes evaluations by changing the average, rather than by changing the end in particular.

In studies 4 and 5, we turn to prior research that has observed end effects in studies that manipulated the structure of the experience within-subjects. Specifically, we examined whether encouraging participants to rely on the structure of the experience (by providing them with multiple experiences that vary only in structure) would increase the impact of the end of the experience. In study 4, participants listened to two aversive sounds that were identical, but reversed in sequence, such that one ended well and one ended poorly. The order of the sounds was counterbalanced. The within-subject analysis replicates previous demonstrations of the end effect: participants rated their better-end experience as less irritating than their worse-end experience,  $F(1, 198) = 72.85$ ,  $p < .001$ . However, the between-subjects analysis indicates that we need to be careful in the interpretation of this effect. At time1, there was no difference in irritation between participants who listened to the better-end sound ( $M = 6.56$ ) and those who listened to the worse-end sound ( $M = 6.69$ ,  $t < 1$ ). It was only at time2 that participants who listened to the better-end sound ( $M = 7.42$ ) reported less irritation than those who listened to the worse-end sound ( $M = 5.88$ ,  $t(198) = 7.31$ ,  $p < .001$ ).

Study 5 conceptually replicated study 4 using positive stimuli. The within-subject analysis replicated the end effect as demonstrated in prior research ( $F(1, 487) = 15.40$ ,  $p < .001$ ). However, between-subjects contrasts indicated that, at time1, there was no difference in enjoyment between participants who received the worse-end experience ( $M = 6.28$ ) and those who received the worse-middle experience ( $M = 6.20$ ,  $F < 1$ ). Only at time2 did participants who received the worse-end experience ( $M = 5.97$ ) rate their experience as less enjoyable than those who received the worse-middle experience ( $M = 6.27$ ,  $F(1, 487) = 5.10$ ,  $p = .024$ ). In other words, the end effect

did not appear until participants were exposed to both experiences—at which point they may have relied on their lay beliefs about the ideal structure of experiences (“ending on a high note”).

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***If at First You Do Succeed, Do You Try, Try Again? Measuring, Predicting, and Understanding Post-Success Behavior***

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While some consumer goals have a single, clearly-attainable outcome, others are complex, having multiple sub-goals and progress points, and requiring a sequence of actions for attainment. To manage complex goals, consumers often parse them out into sub-goals, identifying progress markers along the way, and counting their successes (Carver & Scheier, 1998). Previous research shows that, following initial “goal success” (defined generally as any goal-consistent behavior that is perceived by the consumer as successful goal pursuit, including sub-goal success and goal progress), consumers can either continue or reduce their goal-directed efforts (Fishbach & Dhar, 2005).

Existing theories are split as to which of the two might occur. For example, self-consistency and self-efficacy theory predict that initial goal success will lead to more goal-consistent behavior (Bem, 1967; Bandura, 1986), whereas resource depletion theory predicts that goal-consistent behavior should result in reduced goal-directed effort (Muraven & Baumeister, 2000). In an effort to resolve these conflicting predictions, contextual moderators of post-success behavior have been identified. For example, when successful goal-directed behavior is framed as a sign of goal commitment (versus goal progress), consumers are more likely to continue goal-directed efforts (Fishbach & Dhar, 2005). But how do consumers organically frame success? Do they consistently see it as progress or as commitment? Do they tend to frame it in a similar way over time and across domains? Do these frames have the same impact when they are internally generated as when they are externally manipulated?

The present research seeks to answer these questions by treating post-success behavior not merely as an outcome of contextual cues, but as an individual tendency. A scale is created to measure this tendency and its utility in predicting behavior is demonstrated. Insights regarding consumer responses to goal success are derived from the scale and study findings.

The scale, dubbed the “Response to Success Scale” (RTSS henceforth), is comprised of six scenarios, two in each of three domains (eating, spending, and fitness). Each scenario describes an initial success followed by a dilemma between continued/reduced goal efforts. Participants are asked to report their emotional and cognitive responses to the scenario; these responses are used to predict post-success behavior.

In study 1 we tested 20 cognitive and emotional responses to success. Using exploratory and confirmatory factor analyses, we find excellent fit ( $\chi^2/df = 1.27$ ;  $\chi^2 = 43.24$ ;  $p > .05$ , RMSEA = .049; GFI = .92; AGFI = .87) for a predicted two factor structure. Factor one (six items), dubbed the “tendency towards continued success,” is comprised of items showing an increased motivation towards the goal following initial success (e.g., “I would think about my choice yesterday, and how it shows how committed to saving money I am.”). Factor two (4 items), dubbed the “tendency towards reduced effort,” is comprised of items showing reduced motivation towards

the goal following initial success (e.g., “I would think that since I did well yesterday, I can reward myself with [a purchase] today”). This factor structure is consistent across domains.

Study 2 tested the correlations between the RTSS and 19 theoretically related scales (e.g., self-control, self-efficacy); correlations were low to moderate (.20 - .42) supporting nomological validity. Study 3 demonstrated the test-retest reliability of the scale ( $r = .80$ ). Study 4 showed the scale’s predictive validity in real-life choice in the food domain. In Study 5 RTSS uniquely predicted post-success behavior, while all the correlated scales from study 2 failed to do so. Both studies also demonstrated that the RTSS predicts post-success behavior, but not post-failure behavior; these findings contribute to a theoretical and empirical distinction between post-success and post-failure behavior, a unique insight provided by this work.

Having validated the scale, we focused on its meaning for consumers. Study 6 tested the correlations between the RTSS and 22 measures of mental health. The relationship between how one responds to goal success and mental health is not completely clear. On the one hand, persisting following success may accelerate goal attainment; to the extent that ongoing goals (e.g., dieting, saving, fitness) contribute to consumer wellbeing (Brunstein, 1993), attaining those goals more quickly may lead to improved wellbeing. However, continuous goal pursuit without respite may lead to anxiety, stress, and even a higher propensity to ‘burn out’ (Cordes & Dougherty, 1993), suggesting that constant persistence may lead to reduced wellbeing and goal attainment.

Study 6 shows that a tendency to persist following success is positively correlated with mental health and wellbeing, as well as two real-life goal-success measures (GPA and credit card debt). For example, consumers high on RTSS (+1 SD) have significantly less debt ( $M = \$2,024.13$ ) than those low (-1 SD) on RTSS ( $M = \$5,705.56$ ). These findings suggest that individuals high on RTSS persist not due to pressure and stress, but because goal success is intrinsically motivating to them. Study 7 supported this theory by showing that initial goal progress leads individuals low on RTSS to reduce goal efforts (consistent with prior research; Koo & Fishbach, 2012), but leads individuals high on RTSS to continue efforts, contrary to existing research.

As higher RTSS scores are correlated with improved well-being, two final studies (8-9) sought to identify frames that might make individuals low on RTSS behave with continued goal efforts following success. In study 9, for example, we manipulate whether people have a perceived shorter/longer time frame for goal attainment. Under the short frame, we find that those low on RTSS persist, arguably because they feel a perceived time pressure, leading them not to stray from goal efforts. In contrast, those high on RTSS persist less under a shorter timeframe, possibly because they are demotivated by a perceived reduced likelihood of goal attainment. The opposite is true for the long time frame, consistent with the findings of studies reported above.

Taken together, the findings provide insights into the emotions/cognitions that drive post-success behavior, the differences between post-success and post-failure behavior, the implications of response-to-success tendencies for consumer wellbeing, and new factors that interact with those tendencies to impact post-success behavior.

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***Improving Forecasts by Giving People the Option to Adjust Algorithms***

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One of the largest challenges facing organizations is getting customers and employees to use algorithms instead of human judgment when making decisions. Dawes (1979), Meehl (1954), and others (see Grove et al., 2000) have demonstrated that algorithmic forecasts are more accurate than human forecasts in many domains. However, in a wide variety of forecasting domains, experts and laypeople remain resistant to using algorithms, often opting to use forecasts made by an inferior human rather than forecasts made by a superior algorithm. Indeed, research shows that people often prefer forecasts produced by humans to forecasts produced by algorithms (Diab, Pui, Yankelovich, & Highhouse, 2011; Eastwood, Snook, & Luther, 2012), and more strongly weigh advice from humans than advice from algorithms (Onkal et al., 2009; Promberger & Baron, 2006).

Researchers have found some prescriptions that influence people to use algorithms more often; however, most of these prescriptions are not widely applicable to a large variety of forecasting situations. For example, Ashton (1992) found that professional auditors were more likely to use an algorithm for classifying industrial bonds when they had to justify their classification. Also, Arkes, Dawes, and Christensen (1986) found that experimental participants were more likely to use an algorithm when their judgments were not incentivized. Although these prescriptions are informative and useful, it will not always be possible to significantly change the forecasting process in order to implement them. For example, most organizations would not want to remove the incentives from employee decision making, or pressure customers to justify their selection of the products that they purchase. We aimed to find a simple manipulation that would lead forecasters towards using superior algorithms without changing their incentives or placing additional requirements on them. We hypothesized that people would be more likely to use an algorithm for forecasting decisions when making this decision for many forecasts instead of one. We carried out four experiments to test this hypothesis.

In the first experiment we tasked participants on Amazon Mechanical Turk with deciding between using a doctor and a statistical model to diagnose medical patients. Participants learned that either one or 1,000 medical patients were awaiting a diagnosis in a hospital. They also learned that both an experienced doctor and a statistical model had produced diagnoses for the patient(s), that the model produces a correct diagnosis 75% of the time, and that doctors produce a correct diagnosis 73% of the time. After participants made this choice for one patient or 1,000 patients, they completed the other version of this decision. Participants were more likely to choose the algorithm when diagnosing 1,000 patients (74%) than one patient (65%),  $p=.016$ . We completed a follow-up to this study with participants from the Wharton behavioral Lab where participants imagined that they themselves were the undiagnosed patient for the single patient version of the decision. We found that participants were much more likely to choose the model to diagnose 1,000 patients (62%) than themselves (40%),  $p<.001$ .

In the third experiment, we tasked participants on Amazon Mechanical Turk with deciding between using predictions from basketball experts and a statistical model to forecast the outcomes of NBA basketball games. In this experiment, participants were not informed of either forecasters' performance. Participants made this decision for both one and 250 NBA games and the order of these questions was randomized. We found that participants were more likely to use the model for 250 forecasts (72%) than one forecast (47%),  $p<.001$ . We completed a follow-up to this study where participants chose between a model and an expert for one and 100 NBA games. We informed participants that the model and the expert each made one forecast per day to address the potential concern that humans would tire and algorithms would gain an advantage when producing many forecasts. Once again, we found that participants were more likely to use the model for 100 forecasts (72%) than one forecast (51%),  $p<.001$ .

In summation, our research suggests that people will be more likely to use forecasts from an algorithm instead of a human when they are making this decision for a bundle of many forecasts as opposed to individual forecasts. This research has important implications for marketers, consumer psychologists, and others who could benefit from increased forecasting performance. Indeed, consumers and organizations can and should use algorithms to decide which products to buy (e.g. following recommendations from recommender

systems), set prices for goods, predict market demand, decide which customers to target, choose where to sell a product, decide how to promote a product, and make hiring decisions.

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### ***Leveraging Projection to Increase the Predictive Validity of Self-Reports: Four Experiments in the Domain of Consumption Motives***

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It is well known that respondents view themselves in a more positive light than others. Prominent domains include personal traits (“*better-than-average effect*,” Alicke et al. 1995), abilities (“*above-average effect*,” Dunning, Meyerowitz, and Holzberg 1989), and likelihood judgments (“*unrealistic optimism*,” Weinstein 1980; “*self-positivity bias*,” Raghbir and Menon 1998). However, as everyone cannot be above average, these comparative self-reports are biased. An important theoretical and managerial question is: “How best can self-reports be de-biased?”

A common technique to elicit reliable responses to sensitive questions is projection: ask about other people and use this information as a proxy for self-judgments. For socially sensitive questions, these (de-biased) proxy-reports have been shown to have higher predictive validity for behavioral intentions than the (biased) self-reports (Fisher 1993).

This paper presents an alternate method that leverages projection to “de-bias” (vs. “replace”) self-reports by utilizing contextual manipulations: When other-judgments precede self-judgments (i.e., other-self order) projection should be greater as the other is judged to be more similar and, hence, self-other differences should be attenuated (vs. when self-judgments are elicited first, i.e., self-other order, Raghbir and Menon 1998). The key question is whether other-judgments (projection techniques) or self-judgments elicited after other-judgments (our method) are better predictors of future behavior.

To assess this question we first ran three field experiments ( $N_s=957, 789, \text{ and } 1095$ ) among participants at an international marathon. Prior to the race, the runners were asked for their motivations to run marathon that were grouped into *signaling-related* (more sensitive) and *fitness-related* (less sensitive) reasons. Respondents rated their reasons either before or after rating reasons for the average runner (Studies 1 and 2). In Study 3, we additionally manipulated the referent other (average, similar, inferior, or superior runner). We further assessed the perceived self-other similarity and the extent to which judgments of the other person were anchored on the self (Studies 2 and 3). After the race, we contacted the participants again and in Study 2 and 3 ( $N_s=552 \text{ and } 764$  matched observations) assessed the stated importance of signaling-related products (e.g., finisher medal, finisher t-shirt).

“*I run for fitness, not for fame*”. In all three studies runners believed that they ran more for fitness rather than signaling motives ( $\Delta \text{Fitness}_{\text{Self}} - \text{Signaling}_{\text{Self}}, \Delta M_{\text{Self}} = .78, .94, \text{ and } .80$  all  $>0$ , Motive main effect:  $F_s > 245, p_s < .001$ ). This finding replicates the socially desirable bias in consumption motives, which is at an absolute level.

The “*Nobler-than-thou*” effect. In each study we found that the runners believed that they ran for fitness rather than signaling to a greater extent (see above) than the other runner they judged ( $\Delta \text{Fitness}_{\text{Other}} - \text{Signaling}_{\text{Other}}, \Delta M_{\text{Other}} = .09, .05, \text{ and } -.24$  all  $<$  their corresponding  $\Delta M_{\text{Self}}$ , Target $\times$ Motive interaction:  $F_s > 229, p_s < .001$ ). We refer to this as the “*Nobler-than-thou*” effect, which is relative to a referent other.

*The attenuating effect of order-of-elicitation.* In every study we demonstrated that the “Nobler-than-thou” effect ( $= \Delta\text{Fitness}_{\text{Self}} - \text{Signaling}_{\text{Self}} > \Delta\text{Fitness}_{\text{Other}} - \text{Signaling}_{\text{Other}}$ ) was lower in the other-self condition ( $\Delta M_{\text{Self}} = .57, .86, \text{ and } .66$  vs.  $\Delta M_{\text{Other}} = .19, .17, \text{ and } -.14$ ) than in the self-other condition ( $\Delta M_{\text{Self}} = .99, 1.02, \text{ and } .93$  vs.  $\Delta M_{\text{Other}} = -.01, -.06, \text{ and } -.34$ , TargetxMotivexOrder interaction:  $F_s > 16, p_s < .001$ ).

*Process evidence for similarity (established by mediation and moderation).* As predicted, Studies 2 and 3 showed that in the other-self order the average runner was perceived as more similar ( $M_{\text{other-self}} = .21 \text{ and } .34$ ) than in the self-other order ( $M_{\text{self-other}} = -.10 \text{ and } -.12$ ,  $F_s > 5, p_s < .05$ , with similarity as mediator at 95% CIs). The order effect was moderated by the type of other in Study 3 (4-way interaction:  $F = 2.5, p = .06$ ), that is, it was eliminated for *similar* peers (self-other order:  $\Delta M_{\text{Self}} = .85$  and  $\Delta M_{\text{Other}} = .17$  vs. other-self order:  $\Delta M_{\text{Self}} = .76$  and  $\Delta M_{\text{Other}} = .29$ , TargetxMotivexOrder:  $F = 2.0, p > .10$ ) compared to superior or inferior peers ( $F_s > 5, p_s \leq .02$ ), which corroborates that perceived similarity drives the order effects.

*Role of projection.* Studies 2 and 3 also revealed that the respondents anchored less on themselves when judging the average other in the self-other order ( $M_{\text{self-other}} = 2.94 \text{ and } 2.66$  vs.  $M_{\text{other-self}} = 3.40 \text{ and } 3.47$ ,  $F_s > 13, p_s < .001$ ). Study 3 shows that this holds for average, inferior, and superior others ( $F_s > 2, p_s < .10$ ), but not for similar others ( $M_{\text{self-other}} = 3.27$  vs.  $M_{\text{other-self}} = 3.42$ ,  $F < 1$ ). Taken together, the findings suggest that eliciting responses about others first makes them appear more similar, and leads to greater projection of own motives onto judgments of others, unless the other person is similar to begin with.

*Predictive validity.* Pooling the data across studies, we regressed the importance of signaling-related products onto the fitness and signaling motives projected for others (projection technique: Only Other), the fitness and signaling motives given for oneself (Only Self), and all four predictors together (Both Self and Other), separately for each order condition. First, we find that the motives people give for themselves are better at predicting the importance they assign to signaling-related products as compared to the motives that they give to others and do so parsimoniously, particularly in the other-self order ( $R^2_{\text{Only\_Other}} = .03$ ,  $R^2_{\text{Both\_Self\_and\_Other}} = .09$ , and  $R^2_{\text{Only\_Self}} = .09$ ) versus the self-other order ( $R^2_{\text{Only\_Other}} = .02$ ,  $R^2_{\text{Both\_Self\_and\_Other}} = .07$ , and  $R^2_{\text{Only\_Self}} = .06$ ). Second, in the other-self order, it is the (de-biased) signaling motives people give for themselves that drive how important signaling-related products are perceived rather than the projections for others (which are not significant once self-values are entered to the regression), suggesting that eliciting self-reports after other-reports is a superior alternative to only using other reports (projection techniques).

*Generalizability.* Study 4 (N=230 mTurk) replicated the findings for luxury purchases. Consumers judged that they purchase luxury brands more for quality than status reasons compared to others, particularly if self-reports preceded other-reports. Moreover, we found that self-deceptive needs for social approval (vs. self-enhancement or impression management, Paulhus 2002) drive the effects.

To summarize, we show that when self-judgments are elicited after other-judgments, they are better predictors compared to not only when they are elicited first, but also as compared to only eliciting other-judgments (viz., projection techniques). As such, encouraging projection via contextual manipulations that increase the similarity between the self and the other (order-of-elicitation, type of referent other), attenuates self-other biases in socially sensitive consumption motives and increases the predictive validity of self-reports.

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**BREAK**  
**3:30pm-3:45pm**

**Symposium: Landfill Overload: The Psychology of Disposal Decision-Making**

**Chair:** Grant Donnelly, Harvard Business School, USA

***Thinking About Time as Money Decreases Recycling Behavior***

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Elizabeth Dunn, The University of British Columbia, Canada

Americans are no more likely to engage in environmental behavior today than they were 20 years ago (Morales, 2010). One surprising explanation for the stagnation of environmental behavior may lie in the increased value that individuals place on their time. Prior work has demonstrated that reminding individuals how much their time is worth makes money-related concepts more relevant to the self and leads individuals to focus on their own needs and goals as opposed to the needs and goals of others (Pfeffer & DeVoe, 2009; Vohs, Mead & Goode, 2006, 2008). Researchers have argued that this ability to focus on others is a necessary condition for both prosocial and pro-environmental behavior (Schwartz, 1977; Geller, 1995; Allen & Ferrand, 1999). We propose that thinking about time as money, which leads individuals to focus on personal pursuits, will decrease engagement in environmental behaviors.

To provide an initial test of this hypothesis, we analyzed data from a large-scale, nationally representative survey. Because past research shows that individuals who are paid by the hour are more likely to see their time as money (DeVoe & Pfeffer, 2007, 2010), we predicted that hourly (vs. salaried) workers would report engaging in fewer environmental behaviors. As predicted, hourly (vs. salaried) workers reported less frequent engagement in environmental behaviors,  $r(6930) = -.08, p < .001, CI_{95}[-.13, -.07]$ . This relationship held after controlling for covariates associated with hourly-wage payment and environmental behavior,  $\beta = -.06, p < .001, CI_{95}[-.11, -.04]$  (Table 1).

We then investigated the causal relationship between thinking about time as money and intentions to engage in environmental behavior (Study 2). Participants were assigned to calculate their future hourly-wage or to a control condition. In the hourly-wage condition, participants completed questions about expected income during their first year after graduation. Participants then used this information to calculate their future hourly wage—a technique that has been used in past research to make the economic value of one's time salient (DeVoe & Pfeffer, 2007). In the control condition, participants completed identical questions about expected income and an identical calculation; however, they were not told that they had calculated their future hourly wage. Thus, the key component of this manipulation is that participants across both conditions complete identical calculations of time and money, yet only participants in the hourly-wage condition are explicitly asked to think about their own time as money. As predicted, participants in the hourly-wage condition reported reduced intentions to engage in environmental behavior ( $M = 4.79, SD = .79$ ) compared to participants in the control condition ( $M = 5.01, SD = .72$ ),  $F(1, 183) = 3.85, p = .05, \eta^2 = .02, CI_{95}[-.44, -.00]$ .

In Study 3, we moved beyond self-report to examine whether seeing one's time as money would decrease the likelihood of recycling, a prototypical form of environmental behavior. Participants were assigned to an hourly-wage or control condition using identical procedures from Study 2. Participants were told that they would complete a series of tasks, one of which involved cutting out shapes from construction paper (adapted from Catlin & Wang, 2013). Consistent with the findings of Study 2, a chi-square analysis revealed that fewer participants in the hourly-wage condition recycled their scrap paper upon completing the task compared to participants in

the control condition (12% vs. 41%),  $\chi^2(1, N = 51) = 5.45, p = .02$ . The odds ratio for the condition coefficient was 5.04 CI<sub>95</sub>[1.21, 21.06], indicating that participants were five times less likely to recycle if they had calculated their future hourly-wage.

In Study 4, we explored a mechanism for this effect—the spontaneous recognition of the opportunity costs associated with environmental behavior. In Study 4, we found evidence that hourly-wage workers spontaneously consider the opportunity costs associated with environmental behavior. First, we asked participants whether they were paid an hourly or salaried wage. All participants were then assigned to an opportunity-cost or control condition, and asked to read a scenario that involved making an environmental choice. Consistent with our predictions, individuals who were paid by the hour were no less likely to make the environmental choice in the opportunity cost vs. control condition (50% vs. 36%),  $\chi^2(1, N = 59) = 1.27, p = .26$ . In contrast, salaried workers were significantly less likely to make the environmental choice in the opportunity cost vs. control condition (39% vs. 67%),  $\chi^2(1, N = 67) = 4.42, p = .04$ .

Because reminders of money can lead individuals to prioritize their own needs and goals over the needs and goals of others, we attempted to mitigate the negative effects of thinking about time as money by reframing environmental behavior as an act consistent with self-interest (Study 5). When environmental behavior was framed as a self-transcendent activity, participants who were lead to see their time as money were significantly less likely to recycle compared to participants in the control condition (45% vs. 73%),  $\chi^2(1, N = 92) = 7.79, p < .01$ . In contrast, when environmental behavior was framed as a self-beneficial activity, participants who were lead to think of their time as money were not significantly less likely to recycle their scrap paper compared to participants in the control condition (66% vs. 59%),  $\chi^2(1, N = 87) = .47, p = .49$ .

Taken together, these 5 studies, testing 7492 participants, suggests that viewing time as money shapes environmental decisions, potentially shedding light on patterns of environmental behavior across time and around the world.

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### ***The Effect of Self-Identity on Recycling Behavior***

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Even though statistics supporting the importance of recycling are easily accessible, recyclable products are still being thrown away as trash. Research in consumer behavior has predominantly examined why people purchase and consume products, with very little attention given to these same products at the end of their life-cycle. While consumer researchers have begun to focus on factors that influence recycling behaviors (e.g., Trudel and Argo 2013; White, MacDonnell and Dahl 2011), there are still questions that need to be answered to uncover the psychological processes behind recycling behavior. What makes a recyclable object more likely to be recycled or simply treated as trash? Why might two functionally similar products be treated differently during disposal? In this research, we investigated the role of self-identity in recycling decisions and test the prediction that individuals will be more likely to recycle items that reflect their self-identity.

The most meaningful possessions to an individual are those that help construct and represent the self through strengthening of this self-identity (Ferraro, Escalas and Bettman 2011). If an object is able to reinforce or symbolize an individual's self-worth and self-identity, a strong possession-self link may develop. These possessions can be ordinary objects and do not need to have a high

monetary value, instead deriving their meaning and value through experiences. Although product attachment can be influenced by the possession-self link, the importance of the object, or positive emotion associated with it, the possession-self link was found to be the most important in reflecting self-worth, and therefore had the greatest impact on product attachment (Ferraro et al. 2011). As people consume certain products to reaffirm and communicate their identities, these products can become instilled with meanings that symbolize particular identities. These possessions are often viewed in greater terms than just their functionality, and can become extensions of the self, acting as an anchor for our identities (Belk 1988). Given people buy products consistent with their self-identity, we believe that they may place higher value on these products. Within industrial contexts, products that still contain residual value are recycled more often (Braungart, McDonough and Bollinger 2007; Gobbi 2011; Westkämper and Osten-Sacken 1988). Thus, we expect that during a disposal decision, consumers will be more likely to recycle (vs. trash) an identity-linked product due to that product having a higher perceived residual value. Five studies support our theory.

Study 1 (N = 66) was designed to examine disposal decisions of an item that was either relevant or not relevant to their group identity. Participants were given a piece of paper with a university logo printed on it and asked to state their disposal intentions. The logos were of an identity congruent group (the participant's university) or an unknown group (an unfamiliar university). The results revealed a greater willingness to trash (versus recycle) the paper associated with the unknown group (M = 4.17) compared to the paper associated with the identity congruent group (M = 3.17;  $p < .05$ ).

Study 2a (N=360) employed a single factorial, with three between subjects conditions (National-identity: congruent [USA], incongruent [UK], and control). It was predicted that participants would be more likely to recycle a plastic cup when it represents their national self-identity (US flag printed on it) than in the other conditions because they placed higher residual value on the identity congruent product. The results showed that participants in national identity congruent condition were far more likely to recycle (M = 4.65) than participants in the national identity incongruent condition (M = 4.19;  $p < .05$ ), and those in the control condition (M = 4.05;  $p < .01$ ). To test if the amount of residual value placed on the product explained our results we conducted a mediation analysis which revealed a mean indirect effect that is positive and significant (95% CI: .04 to .25). The direct effect was also (95% CI: .13 to .81). Study 2b replicates the previous study but measures actual recycling behavior. 102 US-born undergraduates were randomly assigned to one of two flag conditions. Participants in the identity congruent condition received a small piece of paper imprinted with a US flag, whereas participants in the identity incongruent condition received a piece of paper imprinted with an Eritrean flag. Results showed that US-born students were more likely to recycle (54.5%) the US flag than the Eritrean flag (27.7%;  $p < .001$ ).

The first two studies focused on individuals' group identities, whereas study 3 and study 4 investigate individual self-identity. We employed a single factorial with two between subjects conditions (self-identity link vs dissociative link) and measured self-esteem and actual recycling behavior as our dependent variable. Those in the self-identity link condition were asked to sign their name on a small piece of paper while those in the dissociative link condition did the same, except with their non-dominant hand. The results revealed that participants in the self-identity link condition recycled the paper significantly more than in the dissociative link condition (65% vs. 39%;  $p < .05$ ). The self-identity x trait self-esteem interaction was marginally significant ( $\beta = 1.11$   $p = 0.067$ ). The Johnson-Neyman point where the probability of recycling is significantly different between the two self-identity conditions is at a trait self-esteem value of 2.75 and higher.

Study 4 investigated self-identity, connection to brands and recycling behavior. 105 Coke drinkers were randomly assigned to a single factorial, with two between subjects conditions (Self-Brand identity: congruent [Coke] and incongruent [Pepsi]) and measured Self-Brand connection. Those in the self-brand identity congruent (incongruent) condition were shown an image of a dented Coke (Pepsi) can and read the following: "Imagine that this empty, dented can has been left behind in the lunchroom at your work". Participants were then asked to respond to two disposal intentions items. Results revealed main effects of self-identity condition ( $\beta = -1.09$ ,  $p < .05$ ), and self-brand connection ( $\beta = -.18$ ,  $p < .05$ ), on recycling intentions. A self-identity condition x self-brand

connection interaction also emerged ( $\beta = .26, p < .001$ ). Coke drinkers intentions to recycle the Pepsi can cans was significantly greater than intentions to recycle the Coke can when their self-brand connection to Coke was less than 2.95. However, Coke drinkers intentions to recycle the Pepsi can cans was significantly less than intentions to recycle the Coke can when self-brand connection was greater than 5.46 In sum, participants' self-connection with the brand Coke significantly and differentially impacted their intentions to recycle an empty Coke vs. an empty Pepsi can. A mediation analysis showed that Coke drinkers valued a dented Coke (Pepsi) more, explaining the process driving our results.

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### ***If I Can Remember It, You Can Have It: Keeping your Identity through Strategic Memory Preservation***

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Our research seeks to understand why people might be unwilling to donate used but still useable possessions to charitable organizations. We propose that consumers are unwilling to give up some types of used goods (i.e., those that are “special” or cherished) because there are afraid that giving up the physical possession will mean that they lose the identity to which the possession is linked. We therefore test the hypothesis in studies 1 and 2 that consumers are unwilling to donate special (vs. non-special) possessions because they fear the loss of the identity associated with these possessions. In studies 3 and 4, we then explore the link between memory and identity to suggest interventions based on strategic memory preservation (Zauberman, Ratner, and Kim 2009) that would allow consumers to preserve the identity linked to special goods when donating them.

Past research suggests that memories are strongly linked to identity (Dalton and Huang 2014; Kihlstrom, Beer, and Klein 2002; Klein chapter; Reed 2002; Sauer et al.). Because of the link between memory and identity, we suggest that actions designed to preserve the memory associated with a particular physical possession will also protect the identity associated with that memory, reducing the sense of identity threat consumers would otherwise feel disposing of an identity-linked good. Zauberman et al. (2009) use the term strategic memory protection to describe how consumers protect good memories in the same way they would other assets. We explore the effectiveness of two types of memory preservation strategies aimed at increasing donation of special goods. *Personal memory protection strategies* are strategies designed to protect the memory for the consumer. These strategies include actions like photographing a special good or writing a story or journal entry describing it and its meaning before donation. A *memory sharing strategy* is a strategy designed to preserve the memory associated with a product by passing this memory on to a future recipient (e.g., writing a note about the significance of the good and attaching it to the good before donating). In this case, although the memory is not preserved for the good's owner, it is passed along intact. We predict that either strategy will reduce identity threat because, by protecting the memory (either to keep for oneself or to share with the new owner), one's identity is also protected.

In study 1, we asked participants to respond to questions about an item they currently own (that is used by still useable) that they either consider special or not. Participants were 81 adults from MTurk (51% female; Mage = 35.48, SD = 12.43). We used a one-factor, two-level design in which participants were randomly asked to think of an item they currently own but no longer use that does (vs. does not) have special meaning to them. After specifying the item they were thinking of, they were asked to describe the item in detail. Participants then indicated their donation likelihood for the product and completed measures of identity threat. As predicted, participants in the special product condition were less likely to donate their product than those in the non-special product condition ( $M = 2.10$  vs.  $4.21, t(79) = 5.31, p < .01$ ). Participants in the special product condition also reported greater fear of identity

loss (i.e., greater identity threat) if they dispose of their possession than those in the non-special product condition ( $M = 3.60$  vs.  $1.69$ ,  $t(79) = 5.71$ ,  $p < .01$ ). Fear of identity loss mediated the effect of product condition on donation likelihood (indirect effect =  $-.52$ , 95% CI:  $-1.0881$  to  $-.0088$ ). The results of study 1 therefore suggest that identity threat is the reason that consumers are unlikely to donate special products that they are no longer using.

A total of 239 adults from MTurk (46% female;  $M_{age} = 36.07$ ,  $SD = 12.82$ ) participated in study 2. Participants were randomly assigned to a 2 (product: special vs. not special) x 2 (product recall: see again vs. not see again). In a critical incident task similar to that used in study 1, participants recalled a product that they no longer owned that was (vs. was not) special to them and that they had donated. In the see again condition, participants were asked to imagine seeing someone else using the product (or a very similar product) to the one they had donated. In the not see again condition, participants were reminded that they had donated the item and never saw it again. The results of study 2 indicate that when participants imagine seeing a product similar to their donated product (or the actual product itself), the effect of donating special goods on identity loss and identity threat is attenuated. The results of study 2 therefore suggest that if consumers are able to remember the product, in this case through seeing it or a similar product again, identity threat can be mitigated.

Studies 3 and 4 therefore examine the potential for strategic memory preservation prior to donation to increase donation likelihood. Unlike prior studies, we focused only on a special product, a meaningful college t-shirt, to reduce variability in the selected product. After describing what the shirt meant to them, participants were told “Please imagine that a couple years from now, you are graduating and moving to a small apartment of your own in a new state and have to get rid of this t-shirt.” In the control condition, participants received no further information. In the identity preservation conditions, participants were asked to imagine preserving their memory of the shirt by journaling or taking a picture in the personal identity preservation condition or writing a note to attach to the shirt before passing it along to someone else in the shared identity preservation condition. The results of study 3 demonstrate that both identity preservation strategies were successful; donation of special products can be increased when participants first engage in preservation of the associated identity. Study 4 demonstrates that it is the reduction in identity threat following memory preservation that underlies the increase in donation likelihood.

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### ***From Garbage to Gift: 'Social' Recycling Promotes Happiness***

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Past research has demonstrated that various prosocial activities promote happiness. For instance, spending money (Dunn, Aknin & Norton, 2008), and volunteering time (Borgonovi, 2008) have been found to increase happiness. But could the decisions one makes when disposing their trash influence happiness? Our research explores the possibility of ‘social recycling’ (disposing still useful items with the intention of sharing with others) promoting happiness in disposers. We test this hypothesis in a field study of Freecycleers, in a laboratory setting and in an online population. Across these studies, we find that social recycling increases positive emotions and decreases negative emotions. Past research suggests that prosocial activities lead to happiness when the actions make a positive impact on others (Aknin et al., 2013). In studies 4-7 we investigate the role of impact in disposal decisions on happiness. We find that the well-being benefits are attributed to making a positive impact on both the lives of others and the environment. Further, we show that



the perceived deservingness of recipients and the way in which items are reused moderate the benefits in social recycling.

In study 1, 172 individuals completed a survey after participating in a Free Cycle. The Free Cycle invited people to swap unwanted items. We collected data from donators, takers, and a control group (those walking by the Free Cycle but did not participate). All participants described their current affective state by indicating the extent to which they felt positive emotions (happy, proud, generous, content, smart) and negative emotions (conflicted, wasteful, frustrated, annoyed, worried). Free Cyclers reported significantly less negative emotions than the control group ( $p < .003$ ). There were no differences in negative emotions between donators and takers ( $p = 1.00$ ).

We sought to replicate these findings in a more controlled experiment. 284 individuals were recruited from Mturk for a 3-group between-subjects design, where the disposal options were manipulated (trash bin only; a trash bin and recycling bin; and a trash bin, recycling bin and sharing bin). All participants were asked to imagine that they were cleaning their house and sorted 18 items into the disposal bin(s) available. After sorting, participants described their current affective state as they did in study 1. Offering a recycling option generated greater positive affect and less negative affect than offering only a trash disposal option. However, adding a social recycling option provided yet more benefit, providing more positive affect,  $F(1, 276) = 19.27$ ,  $p < .001$ , and less negative affect,  $F(1, 276) = 23.46$ ,  $p < .001$  than having a traditional recycling option.

In Study 3, we created a lab experiment where actual donating and taking occurred. After providing consent, 182 participants reported their current happiness. Directly following, participants sorted the same 18 items as study 2, which were placed inside a plastic tub sitting on their desk. Participants were randomly assigned to a traditional trash and recycling condition ( $N = 56$ ) or a sharing bin condition ( $N = 59$ ). Participants were told that the items they placed in the sharing bin would be available for other participants. Takers ( $N = 59$ ) were asked to take an item from the socially recycled items to keep. Participants in the share bin condition reported feeling happier than takers ( $p = .02$ ). There were no differences in happiness after the sorting task between takers and traditional disposers ( $p = .67$ ). We compared happiness measures by condition from time 1 and time 2. Takers did not experience a significant change in happiness,  $t(51) = .27$ ,  $p = .79$ , nor did individuals in the traditional disposal condition,  $t(53) = .95$ ,  $p = .35$ . However, individuals in the social recycling condition reported a significant boost in happiness directly following the sorting task,  $t(50) = 3.13$ ,  $p = .003$ .

In a fourth and fifth study we asked participants to reflect on how their disposal decisions impacted the environment and other people. Helping others was a significant mediator ( $Z = 3.07$ ,  $p < .01$ ,  $\Delta\% = 57$ ), as was helping the environment, ( $Z = 2.62$ ,  $p < .01$ ;  $\Delta\% = 40$ ). The presence of a social recycling bin increases positive affect because it helps the environment and others.

In a sixth study, 298 individuals were given the same disposal instructions as study 2, but prior to sorting items were informed that the items socially recycled would be made available to a family with an annual income of either \$20,000, \$40,000 or \$100,000. Individuals who were told that their socially recycled items were going to a family whose annual income was \$20,000 reported significantly more positive affect than those who were led to believe that their items would go to a family making \$100,000,  $F(2, 297) = 4.02$ ,  $p = .02$ . Therefore, we demonstrate a boundary condition in which social recycling only produces affective benefits when the recipients of the items are perceived as deserving.

In our final study, we evaluated if reuse method influenced the affective benefits of social recycling. Participants ( $N = 203$ ) imagined that they were cleaning out their closet and getting rid of a shirt. Participants were randomly assigned to a traditional disposal condition or a social recycling condition. Following the disposal decision, participants were then asked to report how they felt at the current moment. Participants then imagined two scenarios occurring a week later: (a) seeing someone wear their shirt and (b) seeing someone use their shirt as a rag while washing their car. Participants reported how they would feel in these scenarios on the same

scale. Individuals who had the option of socially recycling reported being significantly happier after disposing than those in the traditional disposal condition,  $t(180) = 3.67$ ,  $p < .001$ . Social recyclers also projected being happier than traditional disposers if they were to see someone wearing the shirt a week later,  $t(183) = 2.06$ ,  $p = .04$ , and there were no differences between conditions in projected happiness when seeing someone reuse the shirt as a rag,  $t(160) = -.84$ ,  $p = .40$ . There was a significant condition (social x traditional disposal) x happiness interaction,  $F(1, 139) = 6.74$ ,  $p = .01$ , suggesting that there is no harm in socially recycling- whether the item is reused 'correctly' or not, individuals who socially recycle their items are overall happier than those who do not.

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## ***Symposium: Information that Moves Us: Understanding the Dynamic Drivers of Consumer Motivation***

**Chair:** Scott Wallace, Duke University, USA

### ***Step-by-Step: The Motivational Consequences of Subgoals***

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Sub-goals, defined as the successive approximations of and steps toward the overall goal (Lewin, 1935), have been found to provide positive reinforcements that lead to greater motivation and persistence (Brunstein, 1993; Locke & Latham, 1990; Soman & Shi, 2003). However, ample evidence also suggests that a focus on sub-goals can interfere with the ultimate goal (Fishbach et al., 2006; Shah & Kruglanski, 2002). What, then, determines the motivational consequences of sub-goals? We adopt a longitudinal perspective and examine how sub-goal structures influence consumer motivation at different time points of goal pursuit.

Based on the literature on the dynamics of self-regulation (Koo & Fishbach, 2008) and goals as reference points (Heath et al., 1999), we propose that a focus on sub-goals can make the goal seem more easily attainable, thus eliciting greater motivation at the outset. When consumers have made substantial progress on a goal and no longer question its attainability, their tendency to continue carrying out goal-directed actions depends on whether they perceive their goal-directed actions are of value. At this stage, a focus on the integrated overall goal (vs. sub-goals) allows consumers to see their actions as more valuable and helps elicit greater motivation.

One pilot study and four experiments tested present predictions. The pilot study establishes the key premise in our hypothesis that whenever sub-goals are present, consumers shift their focus to these small steps from the overall goal. Participants shared their dining experiences to earn 100 points for a \$5 restaurant voucher in a dining experience review program. After the sharing of each dining experience, participants were provided with a choice between two types of feedback options: a holistic, continuous progress bar (i.e., an overall goal structure, with 100 points as the anchor of this progress bar), or five shorter progress bars of equal length (i.e., a sub-goal structure, with 20 points as anchors for each short bar). We found that among ten rounds of choices, participants showed repeated preference for receiving feedback on sub-goals, with the lone exception in round 10, when the sub-goal and the overall goal shared the same end-point. These results provided supportive evidence that whenever sub-goals are present, consumers focus on these sub-goals rather than the ultimate goal.

We then moved on to test our main hypothesis. In Study 1, we used an exercising task in which participants repeated a set of “stepping routines” to burn calories in a workout room. The exercising task was framed either as a holistic, continuous task of burning 200 calories (overall goal) or as a task composed of four sub-sessions that each required them to burn 50 calories (sub-goal). We assessed participants’ motivation by measuring the intensity of exercising, either after they have exercised for five minutes (initial stage) or 15 minutes (advanced stage). We found that while a sub-goal structure led to more intensive workout in the initial stage, participants were more motivated by an overall goal structure when the end-point became near.

Study 2 replicated the effects by directly tracking people’s motivation at different points during the pursuit. Participants joined an online poker game; the goal of the game was framed either as a holistic, continuous task with one overall end-point (300 points), or contained three separate levels with three subordinate end-points (100 points at each level). All participants made the same, steady progress in the game. We found that when people focused on the overall goal, their motivation fitted a quadratic function: While they began the task as motivated as those in the sub-goal conditions, their motivation dropped right after the first round of the game, remained low during the first half of the game, and then gradually picked up at the latter half of the game. In comparison, when people focused on the sub-goal, their motivation fitted a significant, negative linear function: While they began the task highly motivated, their motivation gradually decreased as they approached the end of the game.

Studies 3 and 4 tested the underlying mechanisms. Participants in Study 3 accumulated reward points by writing consumer reviews over a seven-day period. They either set a series of sub-goals (sub-goal), or focus on the overall goal (overall goal). We also included a sub-goal present/overall goal highlighted condition (hybrid), which presented the sub-goals but experimentally focused participants’ attention on the overall goal. At different points of the study, we assessed participants’ motivation as well as underlying mechanisms of perceived goal attainability and perceived value of goal-directed actions. We found that focusing on sub-goals (vs. overall goal or hybrid) led to greater perceived goal attainability and thus greater motivation to write reviews in the initial stage of the pursuit, but conversely led to lower perceived value of the goal-directed actions (i.e., to write the next review) and dampened motivation in the advanced stage. Interestingly, when we highlighted the overall goal and prompted individuals to focus on this final destination when evaluating their actions, the presence of sub-goals became irrelevant and these participants behaved similarly to those who did not have sub-goals.

Study 4 adopted the same context of sharing dining experiences as the pilot study. Participants accumulated 100 reward points by sharing their dining experiences. They either completed the task in the context of a sub-goal reward structure or an overall goal reward structure. Once participants reached 30 points (initial stage) or 70 points (advanced stage), we measured their perceived goal attainability and perceived value of goal-directed actions, as well as their motivation at that moment by recording the number of words they shared to earn more points. Two moderated mediation analyses provided supporting evidence for our hypothesis: People derived greater motivation from pursuing sub-goals when they were worried about goal attainability at the initial stage of the pursuit; conversely, they became more motivated at pursuing an overall goal when they questioned the value of their actions at the advanced stage of the pursuit.

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### ***How Goal Vagueness Alters the Impact of Progress on Subsequent Motivation***

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Consumers monitor progress toward many different personal goals, from the number of pounds lost on a new diet to the number of dollars saved for retirement. These progress assessments have important consequences for consumers' motivation to pursue their goals. Past research suggests in some cases that positive progress feedback leads to high levels of subsequent motivation ("goal gradient" effects, Hull 1932; Kivetz et al. 2006) and in other cases that it leads to low motivation ("goal balancing" effects, Fishbach and Dhar 2005). But when should we expect one effect rather than the other?

This research identifies an important factor for determining whether progress feedback is motivating or demotivating: goal vagueness. Consumers can pursue goals that have specific, well-defined end-states (e.g., lose 8 pounds), or they can pursue goals that have vague, undefined end-states (e.g., lose weight). We propose that, where progress tends to promote commitment and motivation for specific goals, progress toward vague goals will be more likely to decrease subsequent commitment and motivation.

To understand the influence of progress feedback on motivation, we look at two research questions. First, does progress influence subsequent motivation differently during the pursuit of specific versus vague goals? We predict that, rather than increasing along a goal gradient, motivation will gradually decrease during the pursuit of vague goals. Where progress toward a specific goal increases sunk costs and signals greater commitment, progress toward a vague goal will reduce the need for further attainment and undermine both commitment and motivation. Our second research question examines the boundaries of this effect: How does progress affect subsequent motivation when goals are only moderately vague (i.e., range goals)? We predict that even a range goal may be enough to attenuate the problems of goal vagueness.

Three studies test these predictions. Study 1 looked at participants' reported motivation at various progress levels on an effortful lab task, with either a specific goal (complete 10 rounds) or a vague goal (complete as many rounds as you can). After completing 2, 4, 6, or 8 rounds (by condition, between subjects), participants were asked to report how motivated they were to keep working on the task. Regression analyses revealed a significant interaction between goal type and progress level: higher progress led to a significant decline in motivation for vague goals, but led to no such decline for specific goals.

Study 2 tested our hypothesis that more positive progress feedback – which has previously been shown to increase commitment for specific goals – would decrease commitment and therefore motivation for vague goals. Participants were presented with a hypothetical scenario in which they were trying to save up extra spending money over the course of eight weeks. This scenario included either a specific goal (save up \$500) or a vague goal (save up as much extra money as possible), by condition. Participants were then asked to imagine that, halfway through this time period, they had managed to save up \$125 (low progress condition) or \$375 (high progress condition). After this progress feedback, participants were asked to report both their current motivation and their commitment to the goal. A conditional process model allowed us to test whether commitment mediated the different responses to progress in the pursuit of specific versus vague goals. This model showed that higher progress had a negative indirect effect on motivation for vague goals ( $b = -.265$ , 95% CI:  $-.577$ ,  $-.014$ ), but a marginal positive indirect effect for specific goals ( $b = .252$ , 90% CI:  $.012$ ,  $.538$ ), and the two effects were significantly different from each other. Supporting our hypothesis, progress led to a decline in commitment and subsequent motivation for vague goals but the introduction of a specific goal attenuated (and nearly reversed) this effect.

Study 3 replicated the findings of Study 2 and also considered the case of range goals. Participants were presented with a hypothetical scenario in which they were working to lose weight over the course of eight weeks. This included a specific goal (lose 8 pounds), a vague goal (lose as much excess weight as possible), or a range goal (lose between 6 and 10 pounds), by condition. Participants were then asked to imagine that, halfway through this time period, they had managed to lose 3 pounds (low progress condition) or 5 pounds (high progress condition). Once again, a conditional process model examined the indirect effects of progress on motivation via commitment in each of the goal conditions. Replicating Study 2, this model showed that higher progress had a negative indirect effect on motivation for vague goals ( $b = -.739$ , 95% CI:  $-1.498$ ,  $-.046$ ), while there was no significant effect for specific goals ( $b = .174$ ,

95%CI: -.411, .731). The results further revealed that even a moderately specific goal – a range goal – was adequate to attenuate this negative influence: progress did not reduce motivation in the range goal condition (indirect effect  $b=-0.267$ , 95%CI: -.889, .352). Not only did a specific goal attenuate the negative effect of progress on commitment and motivation, but even a moderately vague (i.e., range) goal was sufficient to do so.

The findings of these studies point to an important consequence of goal vagueness. In addition to the previously examined static effects of vagueness on how consumers evaluate and adopt goals (e.g., Wright and Kacmar 1994; Ulkumen and Cheema 2011), we find that vague goals also differ from specific goals in the dynamics of how consumers pursue them. In contrast to the traditional goal gradient of acceleration toward specific goals, consumers become gradually less committed and less motivated as progress accumulates toward a vague goal. Setting specific goals can be a challenging process with drawbacks of its own, but the present findings suggest that specific objectives can have substantial positive effects on the process of goal pursuit. Even without establishing a precise benchmark for success, consumers can reap the benefits of goal specificity by adopting range goals.

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### ***Efficacy and Goal Pursuit: Thinking Good Versus Bad Thoughts***

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Increased perceptions of efficacy typically enhance effort (Bandura 1977). However, other research suggests that making a goal easy to achieve may not help. For instance, Bolton, Cohen, and Bloom (2006) show that remedial (quit smoking) products can increase smoking among current smokers.

Across three studies, we identify situations that hamper high-efficacy individuals' goal-pursuit. We focus on situations where competing goals exist. For instance, in the context of losing weight, individuals plan exercising and dieting (eating healthy) but may be tempted by unhealthy foods when thinking about their diet. We argue that efficacy moderates the effect that elaborating (on goal-consistent actions vs. on goal-inconsistent actions) has on goal-pursuit. Specifically, considering goal-inconsistent actions (eating unhealthy foods) versus considering goal-consistent actions (exercising) will lead to reduced goal-pursuit for high-efficacy individuals but not for low-efficacy individuals.

#### **Study 1: Weight-loss Context**

Participants read that they were trying to lose weight by exercising and by dieting. We manipulated elaboration by varying the type of action between subjects. Half the participants were asked how likely they were to continue working out, while the rest indicated how likely they were to continue on a diet and not eat unhealthy foods (both goal-consistent actions in themselves). While the likelihood of exercising question only draws attention to goal-consistent actions, asking about eating healthy but not unhealthy also draws attention to goal-inconsistent actions (tasty foods). Participants also responded to a seven-item weight-loss efficacy scale. The study was a 2 (elaboration: inconsistent, consistent) x continuous (efficacy) design. We reverse-scaled the dependent measure so that a higher score indicated a greater likelihood of engaging in goal-inconsistent action, giving us comparable measures across studies. The elaboration x efficacy interaction was significant,  $p < .05$ . At low efficacy (1 SD below the mean), elaboration has no effect on likelihood of engaging in goal-inconsistent action ( $M_{inconsistent} = 2.36$  vs.  $M_{consistent} = 2.35$ ,  $p = .97$ ). By contrast, at high efficacy (1 SD above the mean), participants who focus on inconsistent elaboration are significantly more likely to engage in goal-inconsistent action ( $M$

$M_{inconsistent} = 2.47$  vs.  $M_{consistent} = 1.63$ ,  $p < .01$ ).

In study 1 we manipulated elaboration by asking people their likelihood of engaging in different actions, between subjects. In study 2 and study 3 we keep the dependent measure identical across conditions and manipulate elaboration by asking people to rate either the goal-consistent alternative or the goal-inconsistent alternative on various dimensions.

### Study 2: Healthy Eating Context

Participants read a scenario where they had recently gained some weight and wanted to lose a few pounds. We introduced a goal-inconsistent action – going out to a pizza place for dinner. We manipulated elaboration by asking half the participants to rate a dinner of fresh fruit and veggies (goal-consistent) on its convenience, flavorful-ness, and anticipated enjoyment, while asking the other half to rate a dinner of pizza and dessert (goal-inconsistent) on the same three dimensions. All participants then used a seven-point scale to indicate what they were likely to choose for dinner (1 = Eat fruits and veggies, 7 = Eat pizza and dessert). Participants also responded to a ten-item weight-loss efficacy scale. The study was a 2 (elaboration: inconsistent, consistent) x continuous (efficacy) design. The elaboration x efficacy interaction was significant,  $p < .02$ . At low efficacy (1 SD below the mean), elaboration has no effect on likelihood of eating unhealthy ( $M_{inconsistent} = 3.03$  vs.  $M_{consistent} = 3.10$ ,  $p = .73$ ). By contrast, at high efficacy (1 SD above the mean), inconsistent elaboration leads to a significantly higher likelihood of eating unhealthy ( $M_{inconsistent} = 2.68$  vs.  $M_{consistent} = 2.03$ ,  $p < .01$ ).

Study 1 and study 2 used a weight loss context to explore goal pursuit. In study 3 we explore whether the effect persists for a saving goal.

### Study 3: Saving Context

Participants read a scenario where they were saving for a down payment on a new car. However, they spot a sale on a TV, which could replace their recently-broken old TV. They could buy the TV but that would mean having less money to put away towards the car down payment. We manipulated elaboration by asking half the participants to rate the car (goal-consistent) on its usefulness and anticipated enjoyment, while asking the other half to rate the TV (goal-inconsistent) on the same two dimensions. All participants then used a seven-point scale to indicate what they were likely to do (1 = Keep the money for the car, 7 = Buy the TV). Participants also responded to a ten-item saving efficacy scale. The study was a 2 (elaboration: inconsistent, consistent) x continuous (efficacy) design. The elaboration x efficacy interaction was significant,  $p < .02$ . At low efficacy (1 SD below the mean), elaboration has no effect on likelihood of spending ( $M_{inconsistent} = 3.24$  vs.  $M_{consistent} = 3.06$ ,  $p = .52$ ). By contrast, at high efficacy (1 SD above the mean), inconsistent elaboration leads to a significantly higher likelihood of spending ( $M_{inconsistent} = 2.89$  vs.  $M_{consistent} = 1.74$ ,  $p < .0001$ ). Together these three studies show that, for individuals high in efficacy, considering goal-inconsistent actions can decrease the likelihood of goal-pursuit.

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### ***The Impact of Assimilation to Role Models on Consumer Motivation***

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For a variety of goals, individuals are often influenced by the behavior of others towards those same goals (Fitzsimons and Finkel 2010). One form of “others” that consumers look up to is role models, which can vary from groups to individuals. For instance, for an

individual pursuing a health goal, a relevant role model can be a group of athletes (e.g., the Olympic swim team) or a specific athlete (e.g., Michael Phelps). Our research question is: which type of role models leads to greater goal pursuit?

Previous research shows that people assimilate to groups more than to individuals (Schwarz and Bless 2007); therefore, people may endorse more group- (vs. individual-) role models' goals. But for the same reason, people may also be more likely to experience group- (vs. individual-) role models' successes as their own. It implies that the type of information on the role model matters. Specifically, we distinguish between endorsements (e.g., "worth doing," "recommend," "plan to do") and reports of successful action completion (e.g., "I have done it"). We argue group-models promote action more than individual-models when they endorse a goal, but group-models are also less effective than individual-models in promoting actions when they report successful goal pursuit.

Specifically, prior research suggests that people perceive more overlap between the self and the group than the self and an individual (Schwarz and Bless 2007), and perceive the boundaries between the self and the group as fuzzier than between the self and an exemplar (Förster, Liberman and Kuschel 2008). Thus, people feel closer to groups than to individuals of the groups. This closeness facilitates consumers vicariously experiencing other's experiences as their own (Ackerman, Goldstein, Shapiro, and Bargh 2009) as vicarious experiences are more likely the closer one is to the observed "other". Because groups are perceived as closer than individuals of the groups, the endorsements or successful actions of a group are more likely to be experienced vicariously than the endorsements or successful actions of an individual.

Vicarious experience then influences behavior. We predict that, because endorsement implies that the goal is valuable and worth pursuing, and people assimilate to a group's endorsement more than an individual's, a group's endorsement (relative to an individual's endorsement) will lead to greater goal pursuit. On the other hand, because successful actions suggests that progress has been made and temporary disengagement is acceptable, and people assimilate to a group's successful actions more than an individual's, a group's successful action (relative to an individual's successful action) will lead to less goal pursuit. We test this hypothesis in 4 studies.

Study 1 used "leading a green lifestyle" as the target personal goal and used either environmentalists (group) or Al Gore (individual) as role models. We presented participants with 15 green lifestyle activities, and told them that the role models "recommended" these activities in the endorsement condition and "always practiced" them in the successful completion condition. We then measured participants' willingness to pursue several green lifestyle activities in the upcoming week. As predicted, we found that participants were more willing to pursue a green lifestyle after learning that environmentalists endorsed green lifestyle activities relative to when Al Gore endorsed the same activities. However, participants were less willing to pursue a green lifestyle after learning that the group successfully completed the green lifestyle activities, compared to when Al Gore completed the same activities.

Study 2 explored these effects in the context of a fitness goal. We matched the gender of the role models with the gender of the participants. Specifically, for male participants, we used either Hollywood actors (i.e., group) or Brad Pitt (i.e., individual), and for female participants, we used either Hollywood actresses (i.e., group) or Natalie Portman (i.e., individual). We presented participants with some fitness activities (e.g., maintaining a healthy diet and following a workout routine), and told them that these activities were "deemed as worth trying" versus "completed" by the group-model or individual-model. We then measured participants' willingness to pursue fitness activities in the upcoming week and their closeness to the role models. The findings from study 1 were replicated with the endorsement leading to more (less) goal-directed behavior when the role model was a group (individual), and the opposite pattern when successful goal completion was reported.

In study 3 we presented participants with the same goals and activities as in study 2, but rather than measuring subsequent goal-pursuit, we measured how much they valued the fitness goal and how much progress they perceived themselves to have made towards that goal. We found that participants valued the fitness goal more after learning that a group (versus an individual) endorsed

facilitating actions towards it, and that people perceived themselves as having made more progress towards the fitness goal after learning that a group (versus an individual) completed some goal-facilitating actions.

In our final study, we employed another type of endorsement – goal pursuit intention. Presumably, role models would only intend to pursue goal-facilitating activities (e.g., “I plan to do”) when they endorse them. We used health goal as the target personal goal and athletes (i.e., the group) or Michael Phelps (i.e., the exemplar) as role models, and conceptually replicated the findings in previous studies.

Across all the studies, we showed that, in pursuing personal goals, whereas a group’s endorsement is more motivating than an individual’s, a group’s completion of goal-facilitating actions is less motivating than an individual’s. Our research contributes to previous research on the impact of goal related information and the downstream consequences of vicarious experience.

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## ***Individual Papers: Affect, Asymmetry and Multiculturalism: Novel Insights into Decision Making***

### ***The Effects of Evoking Multiculturalism on Choices***

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There has been growing interest in how cultural orientation affects consumer decision-making, and multiculturalism has gained considerable interest in this context. Previously, major areas of focus on research in multiculturalism have been related to the concept of acculturation and the trait of bilingualism. However, these are currently only two of many different conceptualizations of multiculturalism, and there is a significant gap in the marketing literature on the conceptualization of multiculturalism as the exposure to and influence of more than one culture (Lau-Gesk 2003) – specifically, the evocation of multiculturalism through the joint presentation of two cultures. This is particularly important as marketers are increasingly using this approach in their communication strategies (e.g., L’Oreal advertisements). We examine the evocation of this conceptualization of multiculturalism on choice decisions. We evoke multiculturalism by using cultural images, advertisements, and writing prompts. We propose that evoking multiculturalism increases the likelihood of engaging in comparative tradeoffs during decision-making by enhancing cognitive flexibility.

A strong link has been established between multiculturalism/biculturalism and frame-switching (Briley, Morris, and Simonson 2005; Luna, Ringberg, and Peracchio 2008). Cultural frame-switching occurs when multiculturals shift between cultural lenses in response to cues to navigate between different cultural orientations (Benet-Martinez and Haritatos 2005). Bilingualism and multiculturalism utilize similar cognitive processes: one via shifting language; the other via shifting cultural frames. Similar to how bilinguals engage in language-switching, multiculturals engage in cultural frame-switching (Hong, Morris, Chiu, and Benet-Martinez 2000). Research on bilingualism suggests that the ability to switch languages enhances cognitive processes (Kroll et al. 2014; Prior and Gollan 2011). Set shifting, task-switching, language-switching, and frame-switching broadly all involve the ability of executive resources to switch back and forth between different processing modes (Huizinga, Dolan, and van der Molen 2006) – processes that have been referred to in neuropsychology literature as functions of executive control and cognitive flexibility (Blaye and Jacques 2009; Shimamura 2000).



Just as bilingualism engages language-switching in biculturals, which enhances cognitive flexibility, we propose that the frame-switching that evoking multiculturalism engages, enhances cognitive flexibility.

Making choice decisions is an effortful process that depletes limited resources (Levav, Heitmann, Herrmann, and Iyengar 2010; Vohs, Baumeister, Schmeichel, Twenge, Nelson, and Tice 2008; Wang, Novemsky, Dhar, and Baumeister 2010). Making tradeoffs commonly occurs in choice decision-making (Pocheptsova et al. 2009; Wang et al. 2010). Many choices involve making tradeoffs between attributes. Making these tradeoff decisions is a type of effortful processing (Hedgcock and Rao 2009; Luce, Bettman, Payne 2001; Wang et al. 2010).

Executive control (also known as cognitive flexibility) monitors decision-making (Pocheptsova et al. 2009). Executive control also acts as a limited resource (Schmeichel 2007; Vohs et al. 2008). Making tradeoffs requires a willingness to use limited mental resources that include executive functions such as task-switching and other abilities considered to demonstrate cognitive flexibility (Ionescu 2012; Pocheptsova et al. 2009). It should follow, then, that making more tradeoffs demonstrates enhanced cognitive flexibility.

As context effects have been theoretically established and well-demonstrated in the marketing literature (Dhar, Nowlis and Sherman 2000; Dhar and Simonson 2003; Simonson 1989; Simonson and Tversky 1992; Tversky and Kahneman 1991), observing multiculturalism's impact on context effects provides a useful measure of multiculturalism's influence on cognitive flexibility and making tradeoffs. As there is extensive literature on decision biases and they have direct relevance to marketing, we selected common consumer biases in marketing to observe how multicultural cues affect choice decisions that involve making tradeoffs.

Across six studies we demonstrate the systematic effect of evoking multiculturalism versus monoculturalism on common decision biases. Multicultural participants in Study 1 were presented with three choices within various product categories, differing on two attributes. Participants asked to recall multicultural experiences living abroad were more likely to select the compromise choice than those who had been asked to recall monocultural experiences living in their home country or their last shopping trip. In studies 2 – 6, participants were cued using advertisements. In studies 2 – 5, participants evoked with multiculturalism were more likely to make choice decisions that demonstrated an increased likelihood of making comparative tradeoffs: participants evoked with multiculturalism were more likely to make the compromise choice; less likely to demonstrate reference-dependence; and more likely to take background choices into account, respectively. In Study 2, we also demonstrate a boundary condition in which we show that multiculturalism can only be induced if participants were familiar with both cultures being presented. In Study 6, the primary goal was to examine whether evoking multiculturalism increases cognitive flexibility. Participants viewed advertisements, and then completed a measure of cognitive flexibility – a word fragment completion task (Tenpenny and Shoben 1992). Participants in the multicultural condition completed more word fragments than participants in the monocultural condition. Study 6 provides process evidence for the proposed cognitive flexibility-based account of multiculturalism's effect on increasing the likelihood of making comparative tradeoffs.

The results across the studies demonstrate that participants evoked with multiculturalism engaged in frame-switching, enhancing cognitive flexibility and thus are more likely to make choice decisions based on making comparative tradeoffs. As firms engage in multiculturalism, this research shows the value in understanding how evoking multiculturalism can have an effect on consumption decisions. Strategic implications from these findings relate to the unintended effects that multicultural cues can have on consumption decisions or intentions.

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## *Intuitive Preference at a Flip of a Coin: Asymmetric Congruency between Salience and Evaluative Judgment*

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In a series of five experiments, we explore a novel methodology that offers an indirect measure of relative evaluative judgment (liking) of choice options. We find that people intuitively relate high evaluative judgments to salient (focal) labels but this effect is not symmetric as no similar relation was found between low evaluative judgments and non-salience labels. We discuss the link between salience and preference and suggest a congruity explanation between two positively judged ends. Lastly, we demonstrate an important implication of our finding in which our implicit measure of relative evaluative judgment helps de-bias compromise effect, an established system-2 bias.

In the initial demonstration of the effect (Experiment 1), participants played a game in which they saw two alternative DVD movie rewards and tossed a virtual coin to determine which movie they hypothetically win. Before tossing the coin, participants decided on the reward they will win in each of the coin-toss outcomes but the question was framed using the salient label of heads (i.e., “In the case of head, which movie will you win?”). When the movie “The Alamo” was presented together with a least preferred movie [“Superbabies: Babies Geniuses 2”] as was determined by a pretest from the same population, 82% of the participants assigned heads to this movie. However, when the alternative was a more favorite movie [“Forrest Gump”], only 19% of the participants indicated they want to win the movie “The Alamo” in case the coin landed heads up. Therefore, keeping the reward constant, participants in our study associated the same reward with a salient label when it was their preferred choice but not when it was their least preferred choice. In Experiment 2, we explored the asymmetry property of the effect in which framing the same assignment task with tails (a non-salient label) instead of heads, did not yield the reverse results. The likelihood that our participants assigned their least preferred movie to tails did not differ from chance. This finding also rules out a simple rank-matching explanation (i.e., polarity alignment principle). Additionally, participants in the heads assignment condition, compared to those in the tails assignment condition, did not feel more control over the winning outcome, nor did they feel they had a better chance of winning their preferred reward. In Experiment 3, participants performed 20 consecutive choice tasks, each contained a different pair of rewards. After examining a pair of rewards for 5 seconds, one of the rewards started to blink after which participants had one second to assign either heads or tails to the blinking reward. Results showed a similar pattern of behavior. That is, whether the task involved assigning a choice to a label or vice versa did not change our participants’ behavior. More importantly, we replicated our initial findings even when participants had only one second to submit their choice, suggesting that the preference-salience link is intuitive, not requiring long deliberate thinking. Experiment 4 extends our findings to other salient labels (i.e., even/odd, card ranks). Lastly, Experiment 5 was designed to demonstrate how the use of preference-salience congruity can help reduce system-2 bias. Specifically, utilizing the compromise effect, a well-established system-2 bias, we demonstrated how the bias significantly decreases when replacing the standard choice task with the assignment task previously described. Compared to 33% bias in the focal product market share in the regular choice task condition, the bias was reduced to 15% in the assignment task condition. It is worth noting that even in the assignment task condition, the compromise effect did not completely disappear and participants’ assignments of heads to their “favorite” product differed significantly from chance.

Together, our findings demonstrate that people intuitively relate high evaluative judgment to salient (focal) labels but this effect is asymmetric. We refute alternative explanations such as simple rank-matching and subjective probability. We propose the idea that high congruity is achieved because both salience and high evaluative judgment constructs are at the high region of the likelihood scales, i.e., like goes with like (but not the reverse). We argue that perceived saliency is a product of familiarity or uniqueness and both constructs are linked to a positive evaluative judgment. We drew our conclusions from existing literature that support the idea that it is pervasive human characteristic to prefer the known to the unknown and familiar to unfamiliar. For example, psychologists

have long observed that repeated, unreinforced exposure results in an increased evaluation of stimulus (Zajonc, 1969). On the other hand, things that deviate from the usual and expected are curiosity arousing and under most condition will be positively evaluated (Mandler 1982). We also try to explain the asymmetry property using the concept of markedness (e.g. liking is the unmarked and disliking is the marked end of the imputed continuum). We discuss our findings in light of the existing literature from economic and psychology on focal point (Schelling 1960), perceptual fluency (Reber et al. 1988), hedonic familiarity and hedonic marking of fluency (Winkielman et al., 2003), as well common used implicit measures of preferences.

Our work concludes with a suggestion for those who are about to make a decision via a coin toss: choose the option you have assigned heads to regardless of the coin toss outcome. Most likely, this is your most preferred option.

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### ***Mental Thermoregulation: Affective and Cognitive Pathways for Non-physical Temperature Regulation***

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In the behavioral sciences, the term “cool” processing typically refers to those processes that involve cognitions and critical analysis, while “warm” processing alludes to those systems involving feelings, desires, and emotions (Metcalf & Mischel 1999). This terminology suggests that at least semantically, each of these processes encompasses a distinct thermoregulatory tone. However, if reliance on emotions (cognitions) can indeed function as a psychologically warming (cooling) process, individuals may alter their decision-making style according to their thermoregulatory objectives, without conscious awareness.

The mammalian tendency to physically thermoregulate is well documented in the biological sciences (Kirkes 1899, Alberts & Brunjes 1978). Mammals seek warm stimuli when their body temperature drops below normal, and seek cooling stimuli when their body temperature rises above normal. For humans, however, physical thermoregulation may not be the only way in which regulation can occur. Thermoregulation might be possible via non-physical mechanisms. For example, some research suggests individuals may consume stimulating products and partake in interpersonal activities in response to physical cold (Parker & Tavassoli 2000, Tavassoli 2000, Zhang & Risen 2010). Collectively, such research seems to imply that humans can engage in thermoregulation through non-physical and largely mental means, a process we term “mental thermoregulation.” We assume this is indeed the case, and further propose that the use of a particular decision-making style (using either an affective or cognitive pathway) can also serve as a thermoregulatory mechanism.

Thus, we propose that an individual may embody a particular decision-making process that is metaphorically consistent with his or her thermoregulatory *objective* (and thus inconsistent with his or her thermoregulatory *state*), whenever the current state is non-optimal. In other words, we suggest that cold (warm) temperatures may lead individuals to rely more (less) on emotions when making decisions, and that using these compensatory decision-making processes help individuals feel more comfortable temperature-wise.

Our proposed mental thermoregulation framework hinges on the key prerequisite that affective and cognitive pathways can function as warming and cooling mechanisms respectively. Thus, the purpose of Study 1 was to support the validity of our thermoregulation account by demonstrating objective, physical temperature fluctuations as a result of affective vs. cognitive decision-making. The study was a 2 level (task instructions: affective vs. cognitive) between-subjects design. Upon entering the lab, subjects were equipped with

wireless iButton thermometers to measure their temperature over the duration of the experiment. After a filler task, participants were given explicit instructions to describe either their feelings (affective condition) or evaluative thoughts (cognitive condition) in assessing a series of scenarios (procedure from Pham 2001), and we examined the changes in their physical temperature as a result. We expected that affective processing (as compared to cognitive processing) would result in objectively warmer (vs. cooler) physical temperature, suggesting that the ability of affective/cognitive pathways to produce physiological temperature responses. A hierarchical linear model and simple slopes analysis confirmed that those participants in the affective task conditions showed a significant average increase in temperature while those individuals in the cognitive condition displayed a significant average decrease in temperature.

The purpose of study 2 was two-fold: first, to add additional support for the thermoregulation explanation by demonstrating that the use of affective/cognitive pathways can alter how warm/cold an individual feels (not just objective measures), and more importantly, to demonstrate that the adoption of a compensatory pathway can aid in providing temperature-related comfort. The study took the form of a 2 (temperature: cold vs. warm) x 2 (task instructions: affective vs. cognitive) between subjects design. First, participants were assigned either a warm or cold temperature condition (using a cup-holding procedure, Williams and Bargh 2008). Afterwards, they were given either affective or cognitive task instructions (as in Study 1). As expected, those in the affective condition reported feeling significantly warmer at the end of the task than those in the cognitive condition, corroborating our objective findings in Study 1. More importantly, we found a significant interaction on self-reported thermal comfort: in the cold temperature conditions, those in the affective condition reported feeling significantly more comfortable than those those in the cognitive condition, but that in the warm condition, the reverse was true. In other words, participants whose instructions had a thermoregulatory tone that contrasted with their initial temperature state (cold-affective and warm-cognitive respondents) were the most comfortable, suggesting that they were better able to thermoregulate compared to individuals whose instructions matched their initial physical temperature manipulation (cold-cognitive and warm-affective respondents).

While our first two studies support the thermoregulatory power of affective and cognitive decision-making, the purpose of study 3 was to examine whether individuals spontaneously apply this regulatory strategy when exposed to temperatures above or below homeostatic levels. Study 3 was a 2 (temperature: cold vs. warm) x 2 (object description: low sentiment vs. high sentiment) between-subjects design, and examined the degree to which individuals were relying on affect by measuring their WTP for insurance for an object (an antique clock; Hsee and Kunreuther 2000). Presumably, if one is not relying on emotions, there should be no difference between WTP under the two object descriptions. However, if one *is* relying on emotions, we expect WTP to be higher for the object with a high sentiment description. Results revealed a significant temperature by object description interaction. In the cold temperature condition, the difference between the low sentiment and high sentiment conditions was indeed significant, with individuals' WTP higher in the high sentiment condition than in the low sentiment condition. In the warm temperature condition however, the difference between the two object description conditions was not significantly different. A 4-item decision basis scale ( $\alpha = .84$ , Shiv and Fedorikhin 1999) measured whether decisions across different conditions were based on respondents' affective reactions or cognitions. A moderated mediation bootstrapping procedures confirmed that in the cold condition, the indirect effect of object description on WTP through decision basis was significant, suggesting that in the cold condition, participants were relying on emotions while this was not the case in the warm condition.

The fourth study was a 2 (temperature simulation: cold vs. warm) x 2 (number of pandas: one vs. four) between subjects design. We adapted our procedure from Hsee and Rottenstreich (2004), who argue that when individuals rely on affect in making decisions, they become insensitive to scale. Thus, individuals relying on their emotions are willing to donate as much money to save one panda as to save four pandas, but those using cognitive processing are willing to donate more to save more pandas. Results revealed a significant temperature x number of pandas interaction. In the warm condition, the difference between the one-panda and four-pandas conditions was indeed significant- participants were more likely to donate when there were four pandas in the scenario than when there was only

one panda in the scenario). In the cold temperature condition however, subjects appeared to indeed be insensitive to scale- the difference between the one-panda and four-pandas conditions was not significant.

The purpose of study 5 was to provide more robust evidence for our theorizing using a different experimental manipulation (i.e. room temperature), and a wider range of temperatures. This allowed us to confirm that the mental thermoregulation phenomenon is not merely limited to tactile-induced temperature changes, but also manifests in response to atmospheric changes. In addition, by employing wide range of temperature conditions, along with more precise temperature estimates, this study allowed us to define boundary conditions for the phenomenon.

Our research suggests that instead of merely reacting to the physical temperature in a metaphorically consistent manner, physical sensations might instead activate a thermoregulatory goal, thus motivating individuals to embody a process with a metaphorically-opposite thermoregulatory tone. This research encourages more research to explore instances in which physical sensations may lead to goal-driven behavior in a pattern that is metaphorically inconsistent with one's current physical state.

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### ***Affect as an Ordinal System of Utility Assessment***

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An essential aspect of life is a constant need to assess the value of things. Historically, the assessment of value has been primarily conceptualized as a “cognitive,” computation-like process involving operations such as belief formation, inference making, attribute weighting, and value integration (e.g., [Anderson, 1981](#); [Simon, 1957](#)). However, more recent research has shown that the assessment of value often involves affective processes, whereby people evaluate objects based on their momentary feelings toward these objects ([Epstein, 1994](#); [Pham, 1998](#); [Schwarz & Clore, 2007](#)). Affective processes of evaluation seem to tap into a feeling-based system of judgment that is distinct from the cognitive, computational system typically examined in judgment and decision-making research.

We investigate how the reliance on affect in evaluative judgment changes the way that value is assessed. A fundamental question, raised across different fields, such as economics ([Moscati, 2013](#)), consumer psychology, and the happiness literature (e.g., [Lutmer, 2005](#)), is whether the perceived value of things takes the form of an absolute measurable quantity associated with each target object (“A is worth X,” “B is worth Y,” “C is worth Z”), or rather the form of a relative assessment of the various objects being evaluated (“A is worth more than B,” “C is worth less than B”). From a judgment process perspective, absolute or cardinal conceptions of value assume a *rating* form of judgment, with each object assigned a numerical value, whereas relative or ordinal conceptions of value are more compatible with a *ranking* form of judgment, with each object assigned a relative rank.

We propose that the reliance on affect in judgment fundamentally changes whether value is assessed in an absolute (cardinal) fashion or in a relative (ordinal) fashion. Specifically, affective valuations tend to be more ordinal than cognitive valuations. We provided support for this proposition in four studies. Study 1 shows that people have an intuitive preference for ranking (as opposed to rating) when making affective evaluations (as opposed to cognitive evaluations). Participants saw a set of targets (i.e., faces, gadgets, or food dishes) and imagined having to evaluate the set of targets on both a specified affective dimension (i.e., attractiveness, coolness,

tastiness) and a specified cognitive dimension (i.e., intelligence, usefulness, ease-of-preparation). They indicated whether they preferred to evaluate the targets on the affective dimension by ranking and evaluate them on the cognitive dimension by rating; or whether they preferred to evaluate the affective dimension by rating and evaluate the cognitive dimension by ranking; or if they had no preference. The majority of participants stated that they would prefer to *rank* the targets on the more affective dimension and *rate* them on the more cognitive dimension.

Study 2 shows that the preference for ranking in affective evaluation is more than a mere intuition. Participants evaluated a set of faces on either attractiveness (affective evaluation) or intelligence (cognitive evaluation) twice: by both ranking and rating them. Then they indicated which method (i.e., ranking or rating) fits better with evaluating the faces on the given dimension. Participants were more likely to perceive a better fit of ranking when judging the attractiveness of the targets than when judging the targets' intelligence (and conversely, a better fit of rating when judging the intelligence of the targets than when judging the targets' attractiveness).

If a ranking mode of evaluation is generally more compatible with the affective system, one would expect that greater engagement of the overall affective system would increase people's confidence in evaluative ranking, but not necessarily in evaluative rating. In Study 3 participants evaluated how appetizing different pastries (shown in pictures) were by either ranking or rating them. Half of the participants performed their evaluations with an ambient scent of fresh pastries diffused in the room (greater affective engagement); the other half performed their evaluations without this ambient scent (lower affective engagement). We observed that exposure to an ambient scent of pastries would make participants more confident in their rankings of the pastries but not in their ratings.

Finally, in Study 4, we observed that people induced to make affective evaluations exhibit more process evidence of ordinal mental operations. Participants evaluated different individuals of the opposite sex either as potential dates (affective evaluation) or as potential teammates for a project (cognitive evaluation) by rating them. The main dependent measures were not the actual ratings, but three process indicators of ordinal evaluation. First, participants performing affective (vs. cognitive) evaluations were more likely to enter their ratings in their own self-generated sequences as opposed to the sequence suggested by the display. This is because affective evaluations are more likely to involve some private ordering of the targets, whereas cognitive evaluations are more likely to involve independent assessments of the targets. Second, participants performing affective (vs. cognitive) evaluations had better memory for the locations of the targets. This is consistent with the idea that affective evaluations encourage cross-target comparisons, enabling participants to better remember the targets' respective locations. Finally, participants performing affective (vs. cognitive) evaluations had a more accurate recollection of the rankings implied by their original ratings. This is consistent with the idea that people pay more attention to the relative rank-ordering of the target when making affective evaluations than when making cognitive evaluations. Additional measures showed that these effects could not be attributed to a greater level of attention or involvement in the affective condition.

The notion that the overall affective system of evaluation is inherently more ordinal than the cognitive system offers a new perspective on how to view different affective "biases" in judgments and decisions. Rather than being mere "biases," the distinctive properties of affective evaluations may reflect more fundamental structural differences in the overall architecture of the affective system of judgment. Therefore, the ordinality of the affective system of judgment may help explain some well-known judgment phenomena that have previously been attributed to "biases" in judgments and decisions. Consistent with this claim, in four additional studies we show that the greater ordinality of affect-based evaluations helps explain the greater reference dependence and the greater scope insensitivity of affect-based valuations (see Pham, 2007 for review).

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## ***Individual Papers: It's The Little Things: The Impact of Perceptual Cues***

### ***Headspace: The Effects of Acoustic Reverberation on Willingness to Try***

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Sound and marketing are inextricably linked. Retail settings, for instance, are replete with the sounds of other shoppers, salespeople, background music, shopping carts, footsteps, products, announcements, and more. Radio, television, internet, and other channels of marketing communication all feature sound prominently. Products themselves makes sounds both naturally and artificially. However, relatively speaking, marketers know very little about how the various dimensions of sound influence consumer behavior. We isolate and examine differences in one dimension of sound – reverberation – and find that relatively higher levels of acoustic reverberation can increase consumer’s willingness to try unfamiliar products.

Reverberation (reverb) refers to the prolongation of sound (Valente, Hosford-Dunn and Roeser 2008). Extremely high levels of reverberation might be understood or described as echo, though reverb is more typically experienced as simply the decay rate of a sound. Reverb levels are affected by the characteristics of an environment in which a sound is made. The size of a room, the surfaces in that room, and the number and physical constitution of objects in a room all effect how and whether sound is reflected or absorbed, thus affecting how it sounds to a listener. For example, clapping one’s hands in a large, empty lobby with marble floors will sound much different than clapping one’s hands in a small carpeted closet full of clothing. It is because of what reverberation signals to the mind about a space that it may affect consumer thought and behavior.

Sound will typically reverberate less in crowded spaces, as sound waves are absorbed and disrupted by objects in the environment. Thus, low reverberation may lead to a feeling similar to that of being physically crowded, which should lead to more conservative choices (Maeng, Tanner and Soman 2013). In addition, the dominance of higher frequencies in reverberation should lead to lower feelings of risk, which should also improve willingness to try (Lowe and Loveland 2014). We test this primary prediction in two studies using two different sources of sound and product domains.

*Study 1.* The purpose of study 1 was to test the primary hypothesis that higher levels of acoustic reverberation in an environment can lead to greater willingness to try new products. Participants were 188 undergraduate students who participated in the study in exchange for course credit. The study was computer-based and took place at private computer stations in a behavioral laboratory. To begin, participants were told to imagine that they were going shopping and, because of a very good sale going on, had decided to stock up on shampoo by purchasing 7 bottles. Participants were told that they would be presented with a list of brands and that they could select any combination to purchase. It was made clear that participants could choose 7 bottles of the same brand, 1 bottle each of 7 different brands, or any combination of bottles as long as the total purchase was 7 bottles. After participants had read the instructions, they put on headphones to listen to “background music” to help them imagine being in a store environment.

Participants then listened to a selection of instrumental music while making their shampoo selections. One of two versions of a song were played – one that was digitally manipulated to have high reverb, and another that had no additional reverb added. While listening to this song, participants selected 7 bottles of shampoo from a list of 14 real shampoo brands. Participants were allowed to select anywhere between 0 and 7 bottles of each brand, as long as their total number of bottles purchased was 7. After this, participants were asked how familiar they were with each brand of shampoo and responded using a 7-point scale anchored on “Not familiar at all” and “Very familiar”. This concluded the study.

Ten participants reported having trouble with the audio and their responses were excluded for a final N of 178. Using the products selected and participant's familiarity with each product, a score was calculated that represented each participant's demonstrated willingness to try new products. This measure represents the principle dependent variable.

There was no difference in the number of different brands purchased ( $F(1,177)=1.83, NS$ ) or the overall familiarity with the selection of bottles ( $F(1,177)=1.56, NS$ ). However, a one-way ANOVA revealed that participants in the high-reverb condition showed a greater willingness to selected brands with which they were less-familiar ( $F(1,177)=4.34, p<.05$ ), supporting our primary prediction.

*Study 2.* The purpose of study 2 was to generalize the results of study 1 to the context of sound in advertising. Participants were 45 undergraduate students participating in exchange for course credit. The study was computer based and participants were seated at private computer stations in a behavioral laboratory. Participants were told that they study would begin by hearing an advertisement for an airline, after which they would be asked several questions about international travel in general. After putting on headphones, participants listened to an advertisement for a fictitious airline "MarCo Air." The advertisement had been adjusted digitally to have either high or low reverb, and participants heard one of these two versions. After listening to the ad, participants rated how open they would be to visit each of 8 international destinations. In a pretest, each of these destinations had been rated in terms of familiarity by a group of the participant's peers. Using these pre-tested ratings of familiarity, and each participant's own stated interest in the destination, a measure of willingness to try was calculated for each participant. A one-way ANOVA found that higher reverb in an advertisement led participants to be more open to trying unfamiliar experiences, measured in this case as travel to unfamiliar destinations ( $F(1,44)=3.81, p=.058$ ).

Thus, in 2 studies examining the contexts of background music in a store and music and voice in an advertisement, higher reverberation led consumers to be more open and willing to try unfamiliar products. Future studies are scheduled with the intent of examining process and how this sonic "space" interacts with actual physical space and attention in affecting consumer cognitions and willingness to try.

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### ***Warmth or Competence? Effect of Typeface Design on Consumer Perceptions***

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Research has long recognized the communicative capability of typography ([Childers and Jass 2002](#); [Henderson et al. 2004](#)). Typefaces deliver information that goes beyond the messages themselves. In this research, we focus on cognitions and emotions (i.e., warmth and competence) that different typefaces deliver and the effect on consumer perceptions, product evaluations, and choices.

Instead of investigating specific dimensions of typeface characteristics ([Henderson et al. 2004](#)), we apply two broad categorization of typeface: handwritten versus standard print typeface. Handwritten typeface refers to those that mimic human handwriting (e.g., cursive), and standard typeface refers to those typical print typefaces (e.g., Times New Roman).

Warmth and competence have been considered two universal dimensions in social cognition ([Fiske et al. 2007](#)) as well as important traits in brand evaluation ([Aaker 1997](#)). Warm is typically defined as kind, honest, sincere, and trustworthy, while competent is



usually defined as confident, smart, wise, and competitive. We argue that handwritten typeface leads to feeling of warmth while standard print typeface leads to perception of competence. We also show that psychological distance is the underlying mechanism.

Five studies were conducted. In study 1a ( $n = 60$ , 34 male, average age 22.6), participants were shown two shapes (Figure 1) and were asked to pick a shape that signifies warmth or competence. A total of 95% of them picked curves as reflecting warmth and angles as competence.

Study 1b was a 2 x 2 mixed design ( $n = 60$ , 38 male, average age 21.5). We manipulated typeface (handwritten vs. print typeface, within-subjects, Figure 2) and focal traits (kindness vs. competence, between-subjects). Students were told to look for professors who are nice/kind (or knowledgeable/competent). Results showed that participants were more likely to select names with handwritten typeface than print typeface when considering friendliness ( $M = 2.17$  vs.  $0.83$ ,  $p < .01$ ) but to select the opposite when considering competence ( $M = 1.97$  vs.  $1.03$ ,  $P < .01$ ).

Study 2 was a one factor within-subject design ( $n = 58$ ). We tried to replicate the results in a marketing context and to examine the underlying mechanism. Participants were asked to pick any three bottled water designs that made them feel warm and any three that made them feel the product is competent (Figure 3). Perceived psychological closeness was measured. Results showed that handwritten typeface was more likely to be selected when considering warmth ( $M = 2.30$  vs.  $0.70$ ,  $p < .01$ ), while print typeface was more likely to be selected when considering competence ( $M = 2$  vs.  $1$ ,  $p < .01$ ). Supporting our argument, the average distance of the four handwritten typefaces is significantly smaller than that of the four print typefaces ( $M = 1.87$  vs.  $3.62$ ,  $p < .01$ ).

In study 3 ( $n = 109$ , 57 male, average age 20.3), we manipulated product description (functional vs. emotional appeal) and typeface (handwritten vs. print) as two between-subject factors. Participants were shown a short description of a product (buckwheat tea) and were asked to what degree they felt the product was warm or competent. Results showed that for functional description, print typeface led to higher perceptions of competence than handwritten typeface ( $M = 4.33$  vs.  $3.61$ ,  $p < .01$ ), while there was no difference between perceptions of warmth ( $M = 4.21$  vs.  $4.24$ ). For emotional/experiential descriptions, handwritten typeface led to a higher perception of warmth than print typeface ( $M = 4.63$  vs.  $4.20$ ,  $p = .08$ ) while there was no difference in perception of competence ( $M = 4.33$  vs.  $4.12$ ). Bootstrap mediation analysis supported the mediating role of psychological distance.

In study 4 ( $n = 320$ , 185 male, average age 21.4), we manipulated psychological distance (priming distance or near, with a control group) in addition to typeface and type of product description to further corroborate the mechanism of psychological distance. We used milk as the focal product. Results showed that for warmth perceptions, close distance led to a higher perception of warmth than far distance, while typeface had no effect ( $M = 4.87/4.91$  vs.  $3.87/3.97$ ). For competence perceptions, far distance manipulation led to a greater perception of competence than close distance for both typefaces with no typeface effect ( $M = 5.19/4.98$  vs.  $3.58/3.52$ ). In contrast, in the control condition, handwritten typeface was perceived as warmer than print typeface ( $M = 4.61$  vs.  $4.10$ ), and print typeface led to a greater perception of competence than handwritten typeface ( $M = 4.53$  vs.  $4.07$ ,  $p < .05$ ), replicating the results of study 3.

We conducted a final study ( $n = 120$ , 57 male, average age 21.6) to test the effect in different languages and measure the effect on intention and choice. We manipulated focal need, typeface, and language (Chinese vs. English), all between-subjects. After priming focal need (warmth vs. competence), participants were asked to choose between two bottles of juice with the same brand name in different languages and typefaces (Figure 4). Results showed that participants were more likely to pick the juice with handwritten typeface than printed typeface when primed with warmth and the juice with printed typeface rather than handwritten typeface when primed with competence ( $\chi = 32.27$ ,  $p < .01$  for Chinese and  $\chi = 6.67$ ,  $p < .01$  for English).

Overall, results showed that typeface influences consumers' feelings of warmth and perception of competence. We also provided compelling evidence that the effect was due to psychological distance. Our research provides important implications for brand name and packaging design as well as product promotions.

Figure 1

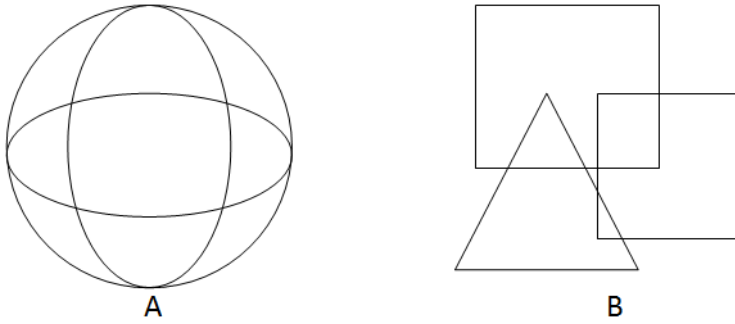


Figure 2

1. 李德生	4. 孙胜东 <sub>↓</sub>
2. 刘再升	5. 王永丰 <sub>↓</sub>
3. 赵平浩	6. 周广连 <sub>↓</sub>

Figure 3



Figure 4



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***Phonetic Embodiment and its Effect of on Attitudes towards Brand Names***

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Rising in a global culture, brand names today oftentimes lack meaning to avoid specific connotations. Therefore marketers create innovative nonsense brand names for their products. The purpose of this work is to explore the possible effects of the phonetic structure of nonsense brand names on brand attitudes. In this work we employ an innovative approach introducing research on embodiment into research on phonetic symbolism.

Research on sound symbolism has demonstrated that sounds create meaning and may affect attitudes towards brand names. For example, Sapir (1929) showed that while back vowels (e.g. mal) are associated with large size, front vowels (e.g. mil) are associated with small sizes. Yorkston and Menon (2004) found that the brand name Frosh for an ice cream was preferred over the brand name Frish, as it was perceived as smoother, richer, and creamier than the Frish name. Recently, Lowrey and Shrum (2007) showed that participants prefer a fictitious brand name whose vowels are associated with attributes which are desirable for the category (e.g. sharpness for a knife).

The works on phonetic symbolism demonstrate the importance of the role played by phonetic sounds to construct meanings. However, to the best of our knowledge no previous work has inquired into the effect of the movement of the articulation organs within the space of the oral cavity while pronouncing the phonemes of a brand name. This question is the focus of the current work.

To answer this question we introduce research in embodied cognition, which ties bodily movements to the creation of, and effect on, attitudes and affect. For example, in Chen and Bargh's (1999) classic work, positive attitudes were more accessible in the participants' minds when they were pulling a lever towards them, as opposed to pushing it away.

Following the research on sound symbolism and embodied cognition, we suggest that there may be a phenomenon of phonetic embodiment, whereby the movement of the organs in the oral cavity during the articulation of a brand name may affect attitudes regarding that name. Specifically, movement from front sounds like "i" and "b" towards back sounds like "u" and "k" simulates food accepting/swallowing. To the contrary, movement of the organs from back sounds to front sounds simulates food rejection/spitting. We suggest that names with back-to-front (bf) oral movements (like Goomie) will elicit more negative attitudes than brand names where the sounds are ordered in a front-to-back (fb) direction of the articulation organs (like Meegoo), due to the movement of articulation organs inside the oral cavity.

Four studies investigate this process. In study 1 we demonstrate the basic phenomenon. Participants indicated their intent to purchase one of two brand names, based on their names only: Goomy (bf) and Feeco (fb). Then, participants indicated their preference between two companies – Picoo (fb) and Gobi (bf) – on company evaluation items, such as "has better customer support", "can sell for higher price", "sounds more credible". Participants also indicated their preference to purchase one of the brand names. Consistent with our hypothesis, results suggest that for all tasks the front-to-back (fb) words, names, and brand names elicited more positive attitudes than the back-to-front (bf) words, names, and brand names. As predicted, the likelihood to purchase Feeco was significantly higher than the likelihood to purchase Goomy; and Pikoo (fb) company was more highly evaluated than Gobi (bf) company.

In study 2 we tested the possible moderation of product category for this phenomenon. Specifically, we assumed that food products, embodied as an intake motion (fb) may impact the effect we found in study 1. We compared the same tasks for food and non-food products. All food/non-food comparisons were between subjects, whereas articulation direction comparisons were within subject. Participants first evaluated the quality, popularity, and likelihood to try any of 6 items in a menu of cocktails (movies), some of which were bf (e.g. Kobim) and some fb (e.g. Megu). Next, they predicted the success of 2 new products in their category – soup (soap) – having either bf (Goven) or fb (Megu) phonetic structure direction. Finally, participants indicated their trust for two brand names (Maitoug (fb) and Kuanbei (bf)) in one of two categories (snacks or hand cream). Results replicated the findings in study 1, suggesting that brand names with a fb articulation direction elicit higher attitudes than brand names with bf articulation direction. However, this effect was attenuated and non-significant for all food products in all comparisons.

Study 3 extends the findings of study 2 by comparing non-food products (e.g. pen) with two types of food: edible (e.g. sandwich) and spoiled (e.g. molded sandwich). The purpose of this study was to further test the phonetic embodiment hypothesis in the case of food products. Results of this study support our prediction that food products bias the phonetic embodiment effect towards always-intake:

participants consistently preferred fb brand names for non-food products, had no preference for articulation direction for food products, and preference for bf brand names for spoiled food.

Finally, in study 4 we tested the mechanism of approach-avoidance associated with the phonetic embodiment effect of nonsense brand names. Participants were biased to prefer fb(bf) brand names for non-food products after viewing (un)pleasant/ approach (avoidance) pictures. These results were replicated in a physical approach-avoidance task (pushing/pulling a table top). Study 4 emphasizes the underlying mechanism responsible for the phonetic embodiment effect.

Our findings indicate that brand names which are comprised of sounds that create a movement of the articulation organs from the back(front) to the front(back) have a negative(positive) effect on attitudes, because the movement simulates food rejection(intake), which activates avoidance(approach) mechanism. In support for these results, the effect of articulation direction is attenuated in food products, as the intake embodied movement interferes with the direction of movement dictated by the sounds. This finding is fortified by our spoiled food results. Further research that will explore the effect of other product categories, as well as the combination of articulation direction and meaning, may reveal additional aspects to the question of the effect of articulation direction on attitudes towards brand names.

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***Pleasure as a Substitute for Size: How Multisensory Imagery can make People Happier with Smaller Food Portions***

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Consumers can often choose among different portion sizes of a beverage or a dessert, and increasing portion sizes contribute to obesity (Nestle, 2003). Health-based solutions against supersizing impose a hedonic cost to consumers by decreasing pleasure expectations (Giuliani et al., 2013), and an economic loss to food marketers by turning consumers away from the larger, more profitable, portions (Dobson & Gerstner 2010). In this research, we examine how to encourage consumers to choose smaller portions at no hedonic cost for them and no economic loss for food marketers.

When choosing a portion size, and taking aside price considerations, consumers are influenced by the following expectations: (1) “Will this portion satiate my hunger?” (2) “Will it impact my health and weight?” and (3) “How pleasurable will it be?” Hunger makes people choose bigger portions (Herman & Polivy, 1983). Thinking about health and weight reduces food intake, but also pleasure (Giuliani, et al., 2013). Focusing on sensory pleasure makes people choose a hedonic food over a healthier one (Shiv & Fedorikhin, 1999), but its effect on choice of portion size of a hedonic food is unknown. This is an important gap because consumption quantity actually reduces overall eating enjoyment (Rode et al. 2007, van Kleef et al. 2013). This is because the first mouthfuls of a palatable food are more pleasurable than each additional mouthful, and overall hedonic evaluations of meals are mostly driven by the enjoyment of the last mouthful, a physiological phenomenon observed in adults and children alike (Rolls et al. 1981).

Drawing on research on mental imagery, which shows that vividly imagining an experience helps retrieve the emotions, cognitions and sensations related to the actual experience (Barsalou, 2008; Krishna & Schwarz, 2014), we create a new intervention, “multisensory mental imagery”. This consists in encouraging consumers to vividly imagine the aroma, taste, and texture in mouth of three familiar hedonic foods, prior to choosing a portion size of another hedonic food. By putting a stronger emphasis on expected sensory pleasure over other considerations (such as hunger), multisensory imagery should lead non-satiated people to expect that

smaller portions are the most pleasurable (as they are in reality), to choose smaller portions, and also increase willingness to pay (WTP) for these portions.

We emphasize that multisensory imagery is qualitatively different and leads to different predictions than repeated eating simulation (Larson et al. 2014, Morewedge et al. 2010), which consists in imagining eating a food at least 30 times: this satiates consumers' desire (and WTP) for food, whereas multisensory imagery should increase preference and WTP for a small portion, thus without satiating desire.

Four experiments in American and French adults and children demonstrate that multisensory imagery (or simply, sensory imagery) can be good for health (choice of smaller portions), pleasure (increased expected pleasure), and business (increased WTP).

In study 1, we manipulate food sensory imagery (vs. non-food sensory imagery) in 42 non-satiated five year old French children by showing them three pictures of hedonic foods (vs. three pictures of seasonal landscapes), and asking them to vividly imagine the sensory pleasures related to these pictures (e.g. taste, smell, texture vs. sensation of sunlight, etc.). Subsequently, the children chose soft drinks and cakes available in different sizes for an afternoon snack. As predicted, food sensory imagery made children choose smaller portions ( $p's < .03$ ).

Study 2 replicates these effects in American adults and provides evidence of the mechanism. In the first part of the study, 69 participants were shown six portion sizes of a chocolate cake, and were asked to evaluate each portion from a "sensory pleasure" and from a "hunger satiation" perspective. In the second part of the study, one week later, the same participants were assigned to a food sensory imagery or a control condition. Then they were shown the same six portions of cake, were asked to choose one, and were asked their WTP for the chosen portion. Food sensory imagery made non-satiated participants choose a smaller portion compared to control ( $p < .03$ ), and also increased their WTP ( $p < .02$ ) (i.e. food sensory imagery made them choose less, and pay more). Process analyses showed that sensory imagery increased the weight of sensory pleasure evaluations relative to hunger satiation evaluations (measured one week earlier) as a predictor of choice.

Study 3 compares the effects of sensory and health imagery on both expected and actual pleasure. We assigned 336 non-satiated French women to a food sensory imagery condition, a control condition, or a health imagery condition in which they imagined how eating three desserts would impact their health and weight. Subsequently, one group rated the expected enjoyment of five portion sizes of brownies and chose one portion. Three other groups ate the smallest, the medium, or the largest portion and rated their actual enjoyment. Sensory imagery increased expected enjoyment of smaller (but not larger) portions compared to control. Further, although both health imagery and sensory imagery led to choosing smaller portions compared to control ( $p's < .03$ ), health imagery made participants choose a smaller portion than the one expected to be most pleasurable (i.e. they "sacrificed" expected pleasure for health) whereas sensory imagery led to choosing exactly the portion expected to maximize pleasure. Further, in all imagery conditions, actual enjoyment was highest for the smallest portion, showing that sensory imagery made people choose an actually more pleasurable portion, as a result of "correct" expectations.

Study 4 examines the managerial relevance by observing the effects of providing vivid information on the taste and aromas of a chocolate cake available in different sizes (sensory condition), compared with information on fats and calories (nutrition condition), and with no information (control). Non-satiated participants chose smaller portions in both sensory and nutrition conditions, compared with control ( $p's < .05$ ). Participants in the sensory condition were willing to pay a higher price for their chosen portion, compared with the control ( $p = .08$ ) and the nutrition ( $p < .01$ ) conditions.

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# ***Individual Papers: Happiness, Jealousy and Guilt: New Perspectives on Discrete Emotions***

## ***The Paradox in Happiness for Sale***

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Happiness appears to be a universal goal (Tsai, Knutson, and Fung 2006). Further, consumers' strong desire for happiness has led to the rise of selling happiness. If companies market happiness, do consumers buy it? Despite a substantial body of research on happiness, previous research has relatively ignored the psychological and behavioral consequences of buying and selling "happiness." The current studies investigate the process underlying how people perceive happiness stimuli and when people buy or do not buy happiness.

Although frequent exposure to specific stimuli often improves attitudes toward those stimuli (Berger and Fitzsimons 2008; Fitzsimons, Chartrand, and Fitzsimons 2008), exposure to happiness stimuli has more variable consequences. Surprisingly, the pursuit of happiness as a goal impairs feeling happy (Mauss et al. 2011)—even simply thinking about happiness makes people monitor their current happiness status (Schooler, Ariely, and Loewenstein 2003), which ultimately decreases happiness (Kesebir and Diener 2008; Gruber, Mauss, and Tamir 2011). Thus, mere exposure to happiness stimuli may not only make someone want to be happy, but also boost monitoring of one's happiness status, which subsequently increases the gap between actual and ideal happiness. Hence, we posit that increased perceived distance from happiness after seeing happiness primes induce consumers to avoid products that sell happiness. Ironically, the more exposed to "happiness" stimuli people are, the more people dislike buying "happiness."

Study 1 examined whether happiness primes impair attitudes toward products that sell happiness. Happiness was primed by asking participants to assess diverse font designs of either HAPPINESS or XQFBZRMQW, then report their attitudes toward a chocolate cake that was either framed as a source of happiness or not. There was a two-way interaction ( $p < .05$ ). Happiness prime, but not neutral prime, led participants to dislike the cake framed as a happiness (vs. control) product ( $p < .05$ ).

Study 2 demonstrated the underlying mechanism by testing a mediation process. After seeing the same primes of Study 1, participants answered four questions measuring their perceived distance from happiness and indicated their attitudes toward a Macy's advertisement that was either happiness-related or not. A mixed ANOVA involving the ad type as a within-subjects variable and prime type as a between-subjects variable was conducted. There was a two-way interaction ( $p < .05$ ). Happiness primes resulted in more negative attitudes toward the happiness advertisement than neutral primes ( $p < .05$ ), whereas there was no significant difference on participants' attitudes toward the control advertisement ( $p > .10$ ). Further, mediation analysis showed that the perceived distance from happiness mediated the relationship between prime condition and attitudes toward the happiness-related advertisement. People avoided products that sold happiness more after they were exposed to happiness stimuli *because* at that moment, they perceived a greater distance between themselves and happiness.

Study 3 tested whether directly reducing the perceived distance from happiness (e.g., recalling a happy memory) eliminates the negative effect of happiness primes. We predicted that boosting levels of happiness would reduce the perceived gap between actual and ideal happiness, and this would reduce the negative impact of exposure to happiness primes on desire for happiness products. Participants were primed with either control or happiness advertisements of Coca-Cola, then wrote an essay either about a time they felt sincerely happy or anything that came to mind (control topic). Next, participants reported their attitudes toward the same chocolate

cakes that were used in Study 1. An ANOVA revealed a three-way interaction ( $p < .05$ ). For participants writing the control essay, there was a prime by target interaction such that participants primed with happiness had relatively negative attitudes toward the chocolate cake framed as a happiness (vs. control) product ( $p < .05$ ). However, boosting happiness appears to eliminate this effect, as framing of the chocolate cake as happiness-related or not had no impact on participants writing the happy memory essay ( $p > .10$ ).

Study 4 tested whether happiness primes induce greater avoidance of products that sell happiness than other goal primes (e.g., health). We hypothesized that, unlike other goal primes, increased difficulty of processing information on products that sell happiness should alleviate avoidance of such products. In the happiness conditions, participants ranked their preferences for happiness-related book-cover designs then reported their attitudes toward happiness salient advertisement with easy or difficult fonts. In the health conditions, all happiness stimuli were substituted for health stimuli. An ANOVA revealed a two-way interaction ( $p < .005$ ). Participants reported lower-level attitudes toward the happiness advertisements with easy fonts after seeing happiness primes ( $p < .05$ ), than attitudes toward the health advertisement after seeing health primes. However, for the advertisements with difficult fonts, the negative effect of happiness primes disappeared, and participants' attitudes toward the happiness advertisement even improved after they saw the happiness primes ( $p < .05$ ).

Study 5 investigated whether the absence of cognitive resources eliminates the negative effects of happiness primes on attitudes toward happiness-related products. Because these effects come from monitoring the perceived distance between ideal and actual happiness status, this comparison should not be possible without cognitive resources to monitor it. Participants were asked to memorize 2 or 8 digit number during the priming task. After seeing either control or happiness primes, participants reported their attitudes toward either a control advertisement or the same advertisement that sold happiness. An ANOVA revealed a three-way interaction ( $p < .05$ ). Under low cognitive load, participants showed no difference between ads with the neutral prime, but liked the happiness ad less than the neutral ad with the happiness prime ( $p < .05$ ). Under high cognitive load, there was no significant difference between the control and happiness advertisements for either prime ( $p > .28$ ).

Although numerous advertisements attempt to sell happiness (e.g., “happy sale” at the shopping mall, “happy meal” at McDonalds, and “open happiness” of Coca-cola), happiness does not always increase product sales: across five studies, mere exposure to happiness stimuli ironically decreased attitudes toward products that sell happiness. Our results suggest that people's increased psychological distance from happiness plays a critical role in the paradox of the sale of happiness. To efficiently increase happiness sales, marketers might reduce the negativity derived from perceived distance toward happiness by boosting consumers' actual happiness, using more complex advertisements, or inducing cognitive load during product purchases.

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### ***Religious Responses to “Selling Happiness”: Consequences for Attitude toward the Ad and the Advertised Brand***

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Many brands sell their products with the promise that the consumer will experience happiness. Nesquik claims: “You can't buy happiness, but you can drink it.” Hugo Boss sells a cologne as the “fragrance of happiness” while Coca-Cola started in 2009 its famous “Open Happiness” campaign. Intuitively, appealing to people's desire to be happy should be universally well received, or at least not harmful to consumer's perceptions of a brand; almost everyone wants to be happy and can relate to the desire to be happy.



However, advertising promoting attainment of happiness through material means may be unpalatable for some individuals; specifically, people who strongly adhere to their religious values, beliefs and practices, and use them in daily living (as Worthington et al. [2003] defined religiosity). In two studies, we examine the moderating role of religiosity on attitude toward ads promising happiness and toward the advertised brands. We show that the moderating role of religiosity on how people respond to these kinds of ads depends (1) on the motivational foundations of religious activity (intrinsic vs. extrinsic), and (2) on the salience of one's religiousness at the time of ad exposure.

Promising happiness through consumption is in essence promoting materialism as it conveys the message that one can be happy thanks to the acquisition of material objects. Yet, prior research shows that religiosity and materialism relate to subjective well-being in opposing directions, the former having a positive association while the latter has a negative one (e.g., La Barbera and Gürhan 1997). Burrough and Rindfleisch (2002) suggest that the extent to which material values undermine subjective well-being depends on collective-oriented values, such as religious values, which are by definition antithetical to a materialistic lifestyle. More precisely, they theorize that motives underlying materialism (e.g., possession, self-centeredness) conflict with motives underlying religious values (e.g., moderation, humility). Such conflicts cause psychological tension, and thus lower subjective well-being.

Therefore, we expect that framing a product as offering happiness may cause a negative attitude toward the ad and the advertised brand, for religious people. We also predict that this response to "selling happiness" is bounded by whether individuals' religiosity is intrinsically or extrinsically motivated. When one is intrinsically motivated in his/her religious activity, one should internalize religious teachings and incorporate them into his/her own system of values (Gorsuch and McPherson 1989). As such, for intrinsically religious individuals, attitude toward the ad and the advertised brand should be negative when it is framed as offering happiness through material means. In contrast, when one's religious activity is extrinsically motivated (e.g., motivated by the social benefits of religion), one should not find these ads aversive but attractive because those should be perceived as the means to achieve an end (i.e., happiness), just like religion.

H1: Intrinsic religiosity should negatively moderate the effect of promising happiness in ad content on attitude toward the ad (H1a) and in turn toward the advertised brand (H1b).

H2: Extrinsic religiosity should positively moderate the effect of promising happiness in ad content on attitude toward the ad (H2a) and in turn toward the advertised brand (H2b).

Religiosity has often been considered as a stable trait across situations (e.g., Hopkins et al. 2014). However, emerging research (e.g., Shachar et al. 2011) has begun to show that people are sensitive to religious stimuli and react differently between situations when religiousness has been primed. Extensive research have shown that subjective well-being or life satisfaction correlate positively with religion (see Lim and Putnam 2010 for a review). Because the pursuit of happiness resides at the heart of most religious and philosophical doctrines (Kesebir and Diener 2008), we hypothesize that religious people should find messages evoking happiness appealing, but only when religiousness is not salient. When it is salient, attention should be directed toward the discrepancy between collective-oriented values that religions preach and appeal to materialism made in the advertisement.

H3: When religiousness is (vs. is not) salient, attitude toward the ad promising happiness should be less (more) favorable.

Study 1 (N=273) was conducted online recruiting American MTurkers and used a 3 (promising happiness: happiness vs. positivity vs. neutral) x 2 Continuous (intrinsic and extrinsic religiosity) between-subjects design (controlling for gender, age, income, religious affiliations, and general religiosity). Participants were first asked to complete the Religious Motivational Orientation (RMO) scale,

designed to measure both intrinsic (8 items) and extrinsic (6 items) religiosity. Afterwards, they were randomly assigned to one of three print ads of a car: one promising happiness, one promising quality, and one identical to the happiness ad but without any tagline. Doing so allowed us to differentiate the promise of happiness from mere positivity. Finally, participants were asked to complete two sets of questions to measure attitude toward the ad (Aad) and attitude toward the advertised brand (Ab) (3 items each).

We conducted two moderated mediation analyses (Hayes 2013, model 75) in order to compare the neutral ad to the happiness ad, on the one hand, and the neutral ad to the positivity ad, on the other (see figures 1A and 1B, respectively). Results of study 1 supported the first two hypotheses. Specifically, the conditional effect of the comparison between the happiness ad and the neutral ad on Aad was negative when intrinsic religiosity was high and extrinsic religiosity was low ( $\theta_{([Baseline\ vs.\ Happiness\ ad] \rightarrow Aad)} | RMO\_I = 3.46 | RMO\_E = 1.14 = -1.76, t(251) = -2.35, p = .020$ ), and positive when intrinsic religiosity was low and extrinsic religiosity was high ( $\theta_{([Baseline\ vs.\ Happiness\ ad] \rightarrow Aad)} | RMO\_I = 1.77 | RMO\_E = 3.05 = 2.21, t(251) = 2.90, p = .004$ ).

Study 2 (N=518) recruited American participants from an online panel, and replicated study 1 with two notable differences. First, in order to isolate causality, we primed religiousness by asking participants to complete the RMO scale either before or after the stimulus advertisement and the Aad/Ab questions. Second, we examined our predictions using a low-involvement product category: a soft drink. As such, study 2 used a 2 (promising happiness: neutral vs. happiness) x 2 (religiousness: neutral vs. salient) x Continuous (intrinsic religiosity) between-subjects design (controlling for gender, age, income, religious affiliations, general religiosity, and attitude toward the product category).

We found a significant three-way interaction on Aad (Est. = -1.33,  $p = .003$ ). Further investigations revealed that the conditional effect of the comparison between the neutral ad and the happiness ad on Aad was indeed negative when intrinsic religiosity was high and religiousness salient ( $\theta_{([Neutral\ vs.\ Happiness] \rightarrow Aad)} | Salient\ religiousness | RMO\_I = 4.02 = -.73, t(496) = -2.02, p = .044$ ), but positive when religiousness was not salient ( $\theta_{([Neutral\ vs.\ Happiness] \rightarrow Aad)} | Neutral\ religiousness | RMO\_I = 4.02 = .72, t(496) = 1.91, p = .057$ ). A moderated mediation analysis (Hayes 2013, model 72) found support for our model (see figure 2).

The potential influence of religiosity on perceptions of brands offering people happiness is not trivial, given that much of the world's population holds some kind of belief in God. Therefore, understanding how religiosity influences ad and brand perception, particularly in the context of brands increasingly attempting to appeal to people's desire for happiness, is an important avenue for research.

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### ***Regain Attention with Brightness: The Positive Relationship between Incidental Jealousy and Preference for Bright Products***

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Jealousy is an aversive emotional state arising from a perceived threat to an important relationship or position that is produced by either a real or an imagery rival (Salovey, 1991; Scheinkman & Werneck, 2010; White & Mullen, 1989). The most typical jealousy-evoking scenario involves a romantic triad – that is, people suspect that their partner is interested in a rival and this rival poses a threat to their relationship (Parrott & Smith, 1993; Salovey, 1991; White & Mullen, 1989). Yet, jealousy can emerge in other types of triadic relationship as well. For instance, children can be jealous of a sibling's relationship with their parents (Masciuch &

Kienapple, 1993); a consumer might be jealous of another's relationship with a salesperson (Chan & Sengupta, 2013). The key condition for jealousy is the perception that a valued relationship of any type is being usurped by a rival.

Previous research has mainly focused on how jealousy influences behavior toward either their relationship partner or the potential rival (Arnocky et al., 2014; de Weerth & Kalma, 1993; Mullen, 1996). For instance, when jealousy induces a concern about a marriage partner's infidelity, it can diminish people's interest in infants and parental involvement (Hill & DelPriore, 2013). In some cases, jealousy can bias one's self-view, leading to distorted perceptions of oneself as more similar to a perceived romantic rival (Slotter et al., 2013).

Although the strategies that people use to cope with feelings of jealousy in social relationships are well documented, however, the impact of these feelings on consumption behavior has not received much attention. Drawing on evidence that jealous people have a strong desire to hold their relationship partner's attention and interest (Buunk et al., 2008; DeSteno & Salovey, 1996), the current research explored the possibility that jealousy can activate a more general "competition for attention" mindset that influences consumers' preference for eye-catching products in domains that are not directly related to the conditions that gave rise to it.

In conceptualizing these effects, we were stimulated in part by evidence that people allocate more attentional resources to visual stimuli that are brightly colored (Duncan, 1984; Harris & Jenkin, 2001; Pain, 1969). Therefore, if jealousy often occurs when people perceive that they are receiving less attention from another than a rival is receiving, it may induce a general motive to regain the attention they have lost, leading them to prefer eye-catching products that allow them to achieve this goal indirectly. Moreover, the reverse could also occur. Activating concepts associated with brightness might elevate expectations for being the center of attention and these expectations could lead them to experience more intense reactions to a jealousy-eliciting situation.

Four studies tested these possibilities. In Study 1, a correlational study, participants were asked to react to a number of scenarios that could potentially elicit jealousy. In addition, they reported their liking for brightly colored clothes, shoes and other personal items. We counterbalanced the order in which brightness preference and jealousy scenarios were presented. We find a bidirectional relationship between brightness preference and feelings of jealousy such that not only people who had reported feeling jealous would prefer to have more bright items, but also those who had reported preferences for bright colors would report more extreme reactions to jealousy-eliciting situations.

In Study 2, disguised as a life experience study, participants were first asked to recall either a past experience that gave rise to feelings of jealousy or a typical day experience (as the baseline control condition). Afterwards, participants proceeded to an ostensibly unrelated task, in which they were asked to imagine they were shopping online and were presented with five pairs of items taken from Nike's online store. One product in each pair was brightly colored and the other was dull in color. Participants indicated their preference for one of the products in each pair. The results demonstrated that recalling a personal experience in which they felt jealous (vs. neutral) increased participants' preference for brightly colored products in a subsequent product choice situation.

Study 3 replicated these findings in a different consumption context. Furthermore, we aimed to rule out mood-repairing motive as a possible alternative account. Specifically, one might argue that because bright stimuli can boost one's general mood, this factor might account for our findings rather than the motivation to get others' attention. We reasoned that if people who feel jealous prefer bright products because exposure to these products can repair their mood, this preference should be evident regardless of whether participants could own the products or not. However, if people's choices of these products result from a "competition for attention" mindset that is stimulated by the desire to regain attention from others, then mere exposure to the products should not have much effect on their preferences. We therefore predicted that if the product to be evaluated could be purchased and owned, people who felt jealous would show a greater preference for the attention-grabbing alternative. If the product could not be purchased and owned,

however, the effect of jealousy on preferences should not be evident. Second, we empirically measured participants' motivation to seek attention from others. Results suggested that motivation to seek attention from others mediated the effect of jealousy on greater desire for bright products. Moreover, the effect only occurs when participants can personally own the product.

Finally, in Study 4, we explored whether imagining oneself wearing bright clothes can lead to greater feelings of jealousy in jealousy-evoking situations. Results showed that imagining wearing brightly colored clothing increases the intensity of reactions to jealousy-evoking situations. On the other hand, the brightness of others' clothing, which provides an extraneous explanation of the attention they receive, decreases participants' feelings of jealousy regardless of their own apparel.

Taken together, to our best knowledge, this research provides the first evidence that incidental jealousy can affect consumers' choices in situations that are *unrelated* to those in which the jealousy is induced. Our research also contributes to a growing body of research findings which suggest that incidental emotions can affect people's sensory perceptions and preferences.

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### ***Guilt as an Explanation for Pay What You Wish Prices***

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Since a widely publicized 2007 promotion of the rock band Radiohead's *In Rainbows* album (Elberse & Bergsman 2008), research into pay what you wish pricing (PWYW) has captured the interest of psychology, economics and marketing researchers for two reasons; first, as a sustainable, alternative pricing mechanism along lines of name-your-own-price and other participatory pricing schemes (Chandran & Morwitz 2005). Second, examining how buyers respond when they are free to pay any price they wish (including nothing) opens a new window onto these consumers' utility functions including social preferences that extend transactional costs and rewards beyond monetary gain (Rabin 1993; Thaler 2004).

Using a multi-method approach including two experimental studies and a large multinational dataset from an actual PWYW field study, this paper investigates *why* customers routinely pay when given the opportunity to act selfishly and why they choose the prices they pay. We propose that the propensity to anticipate guilt determines consumers' PWYW price choices. While guilt has been posited as explanation for PWYW behavior, there has not been an empirical test of the relationship between guilt and prices and the conditions under which guilt plays a significant role.

In study 1 we show that guilt proneness has a significant and positive association with pay what you wish prices, while ruling out competing explanations of empathic concern and reciprocity as alternative motives that have been suggested in the extant literature (Kim et al. 2009; Regner & Barria 2009; Greiff et al. 2013) but were not previously tested.

Study 2 replicates the finding that guilt proneness is related to PWYW prices while also showing that a socially constructed reference price (the average price paid by others) has a significant, positive effect on pay what you wish prices, with participants exposed to the reference price paying higher prices compared to participants who are not exposed to a reference price. This study also finds that consumers' willingness to pay (WTP) is positively related to their PWYW prices. Customers with higher WTP pay significantly higher prices. We find a significant interaction between guilt proneness and willingness to pay such that participants with higher propensity for guilt pay significantly higher prices as their willingness to pay increases. We suggest that a negative state relief model predicts consumers will act to avoid guilt (Bauman, Cialdini, Kendrick 1981, Pelligra 2011). Our results support the notion that

consumers pay more when they anticipate feeling guilty; either because they consider paying a price below the norm, or because they selfishly retain excessive available surplus.

Study 3 tests the results of studies 1 and 2 by examining a novel field dataset of 83,000 real customer purchases of an online video game over a two-week pay what you wish promotion. This dataset is novel in that it controls for aspects that make it difficult for previous studies to account for social preferences as explanations for price choices. Specifically, customers in this study pay anonymously using an internet payment system (eliminating social distance and self-presentation motives), and the PWYW promotion is understood to be a one-shot purchase (eliminating strategic continuation motives for higher prices). Another unique aspect of the data relevant to our experimental findings is that customers in this field study were provided with information about the average price paid by other customers prior to making their pricing decision.

Contrary to findings from field studies where there was no socially constructed reference price which exhibit a decay in prices over time (Music Ally 2008; Reiner & Traxler 2011; Schons et al. 2013). PWYW prices in our study rise significantly over the 14-day period. We demonstrate how the results of study 2 can account for this observed rise in prices over time if guilt prone customers pay higher prices when exposed to the socially constructed reference price.

Using data provided by customers in an exit survey after payment, the field data also shows that consumers with higher valuation for the good pay more on average (in absolute terms) than those with lower valuations, though they share a lower proportion of their available surplus.

Finally we show how guilt related measures such as a country's Hofstede measure of individualism (Hofstede 2011; Fougere & Moulettes 2007) accounts for significant cross-country price differences in PWYW prices.

This paper makes several contributions to an emerging PWYW literature. By focusing on anticipated guilt as an explanation for why participants choose PWYW prices, we show how a socially constructed reference price can be used to induce guilt and produce higher prices. While other studies have examined exogenous reference prices, such as a required or suggested minimum PWYW price set by the firm (Johnson & Cui 2013), or posting a suggested retail price (Regner & Barria 2009), this paper examines a reference price that represents a "fair price" norm established by other customers. The increase in PWYW prices resulting from posting this socially constructed reference price helps explain actual field data and accounts for an observed rise in prices over time compared to previous studies which show a decay in prices and where no reference price was available to customers. We show that anticipated guilt also explains why consumers with higher levels of guilt proneness pay more as their willingness to pay rises. The observed interaction explains both the experimental results, exit survey data from the field study, and accounts for the substantial cross-country price differences found in the field data.

This paper sheds light on both active streams of PWYW literature both by suggesting a mechanism by which sellers can achieve sustainable PWYW prices over time, and in providing an underlying motivation for customer's behavior under PWYW price policies.

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# ***Individual Papers: In the Eye of the Beholder: The Impact of Beauty on Choice and Judgment***

## ***Health or Beauty? How Consequence Type Influences Temporal Proximity and Vulnerability to Negative Health Outcomes***

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Our research investigates how graphic warnings about health behaviors can be rendered more effective by highlighting the social consequences of negative health outcomes. Specifically, we investigate if temporal proximity and perceived vulnerability to negative health outcomes can be enhanced by the use of social consequences. Additionally, we investigate if health messages that highlight social consequences alter perceptions of subsequent experiences.

Research shows that temporal framing (Chandran and Menon 2004), future orientation (Kees et al. 2010), and consideration of future consequences (Kees 2011) have important effects on health behavior. Additionally, highlighting social and short-term consequences can be effective among adolescents (Keller and Lehmann 2008), while other research points to the efficacy of highlighting long-term health consequences among adults (Witte and Allen 2000). Thus, perceived temporal distance, message content, and audience specificity are important when determining health behavior perceptions. Because different consequences can have varying effects, it is important to identify what consequences other than long-term health consequences could be effective in deterring adult populations from unhealthy behaviors.

Since social consequences are considered more commonplace and immediate when compared to long-term health outcomes, we posit that emphasizing the social aspects of negative health outcomes will increase the perceived temporal proximity until the outcome. Subsequently, this increased proximity will amplify perceived vulnerability to the outcome, resulting in increased message effectiveness. This increased vulnerability will lead to differences in perceptions of experience. We conducted four empirical studies to test our hypotheses.

Study 1 was a 2 (social versus health consequences) cell between-subjects design with seventy-one student participants. In the health condition an image of teeth with gingivitis was paired with a warning that stated, “Not flossing regularly eventually causes gingivitis, which weakens gum tissue, and can adversely affect your health”. In the social condition the warning stated, “Not flossing regularly eventually causes gingivitis, which results in bad breath, and can adversely affect your social life”.

Our key dependent measures were perceived vulnerability to the outcome (e.g. “How likely do you think it is that you will get gingivitis?”) and perceived temporal proximity of the specific negative health outcome highlighted in the warning (e.g. “How far away does gingivitis seem to you?”).

In line with expectations, we found a significant main effect of consequence type on temporal proximity ( $p < .05$ ) and perceived vulnerability ( $p < .05$ ) such that social consequences elicited greater perceived vulnerability with lower temporal distance than health consequences.

Study 2 tested our prediction that emphasizing social consequences can have a delayed effect on perceptions of subsequent experience. The study was a 2-cell (social versus health consequences) between-subjects design and was administered in two separate parts. Forty-four members of an online panel completed both parts of the survey.

In both conditions participants watched a two-minute video about texting while driving. After watching the video, participants were instructed to “think about and list all of the social (vs. health) consequences of severely injuring yourself because you were texting while driving”.

After a 48-hour delay, when participants reflected on the last text they sent while driving they viewed the experience and the text itself differently between the social and health conditions. For example, there was a main effect of consequence type on perceptions of the bad/good nature of the text sent ( $p < .05$ ) with respondents in the social condition viewing the text less favorably than those in the health condition. Further, when asked about how “well thought out” the text was, participants in the social condition indicated that the text was not as well thought out as compared to participants in the health condition ( $p < .05$ ).

In Study 3 we used the same design and procedure as study 2 but we considered a different outcome – obesity. In the first section all participants watched a short video that showed how soda consumption can lead to obesity and then listed all of the social (vs. health) consequences of obesity. Approximately 24 hours after completing the first study, we asked participants to think back to the last soda they drank and to rate it on 7-point scales ranging from bad-good, not at all enjoyable-very enjoyable, not at all pleasurable-very pleasurable, awful-nice, not at all thirst quenching- very thirst quenching). In line with our expectations, there was a main effect of consequence type on perceptions of the positive/negative nature of soda last consumed ( $p < .05$ ) with social participants less favorably inclined towards their consumed soda than health participants.

Study 4 was a 2 (social versus health consequences) cell between subjects design and comprised two parts. Forty-three students participated in both parts of the two-part study. Four days after completing the first part of the study, the students participated in an ostensibly unrelated study. In this part of the study, they were given a sample of sunscreen to try and their opinions about the sunscreen were solicited.

In line with our expectations there was a main effect of type on all our dependent measures in part I including temporal proximity ( $p < .05$ ), perceived vulnerability ( $p < .05$ ) and intention to protect skin ( $p < .06$ ) such that social consequences elicited greater severity, vulnerability and intention to protect but lower temporal proximity than health consequences. A mediation analysis demonstrated that temporal proximity mediates the relationship between consequence type and vulnerability. We also found that respondents in the social condition reported more favorable experiences with the sunscreen ( $p < .1$ ).

This research provides a theoretical contribution to psychological distance literature by illustrating how psychological distance influences health-related behaviors. More specifically, this research identifies critical message attributes (social consequences, graphic warnings) that public-policy makers can use in order to alter the perceived psychological distance until the negative health outcomes which will increase the susceptibility of the negative health outcome resulting in less favorable consumption experiences. Furthermore, these studies suggest that there may be alternate routes to influences behavior other than through intentions. Specifically, if warning messages can alter perceptions of experience perhaps they can be just as effective as or even more effective at changing behavior than messages that attempt to change intentions.

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***Pursuit of Beauty: The Cultural Divide***

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## Introduction

Human beings have always coveted beautiful objects, but the obsession with looking good is touching new heights with double-digit growth in cosmetic, skin care and plastic surgery industries across the world. Existing literature suggests that standards of beauty are not universal, but culturally defined (Hamermesh, 2011). In this paper, we focus on the cultural antecedents and drivers of the pursuit of looking beautiful.

Literature suggests that in highly collectivist societies, external beauty is objectively and narrowly defined (Lee, 2013). We argue that driven by adherence to norms, Easterners are more likely to conform to these objective ideals of beauty. Specifically, as Easterners value social connectedness and believe in complying with the social norms of in-group (Markus & Kitayama, 1991), they are more likely to use various means of enhancing appearance to fit in and gain approval of their social circle.

This effect would manifest both at a cultural level (individualism/collectivism) and at the individual level (independent/interdependent self-construal). Independents value individual accomplishments; interdependents gain their sense of worth from belonging to a larger group and value group harmony (Zhang & Shrum, 2009). Hence, an interdependent self-construal enhances the inclination for fitting in, driving conformity to the beauty ideals set by society, for the fear of being ostracized or left out. We hypothesize that this link between interdependence and usage of appearance enhancing tools will be mediated by self-discrepancy (Higgins, 1987) or the gap between the ideal beauty standard and actual self-image. Specifically, the collectivist society's expectation to conform will make women feel more "discrepant", or not living up to the ideal, thus driving usage of enhancement products that can help reduce the perceived gap between ideal and actual self.

Given the causal mechanism of self-discrepancy, we further predict that interdependents' (positive) attitude towards an appearance enhancing product will be driven by their perceptions about the product's efficacy or its ability to minimize the gap between ideal and actual self. We conceptualize this as the perceived tangible improvement the cosmetic product can make to the individual's looks.

## Methodology and Findings

We test the above hypotheses across three studies. We focus on feminine beauty for this research. Respondents for all the studies are women in the age group of 18-35 years. Study 1 was conducted with Indian and US participants, Study 2 with US participants and Study 3 with Indian participants. All participants were recruited through MTurk.

Study 1 investigates the impact of culture (Eastern: India, Western: USA) on the usage of image enhancing tools such as filters on smartphone apps to make 'selfies' appear more beautiful than the person actually is. These handy apps are perfect for a quick makeover to get flawless complexion without blemishes or marks, feature enhancement for bigger, brighter eyes, sharper nose, angular jawline, removing dark circles, adding a smile curve to lips, whitening teeth, changing eye color and even applying make-up (Hongkiat, 2013; Osada, 2014). We conceptualize the dependent variable as the likelihood of using filters or image enhancing apps to make photos look more attractive using a five-item scale (Cronbach's  $\alpha = .93$ ). As hypothesized, Indians are more likely to use image correcting filters and tools to enhance their photographs, compared to Americans ( $M_{\text{Ind}} = 4.8$  vs.  $M_{\text{USA}} = 3.75$ ,  $F(1, 79) = 8.233$ ,  $p = .005$ ,  $\eta^2_p = .094$ ).



Study 2 investigates the phenomenon at an individual level by measuring the interdependence dimension of self-construal (Singelis, 1994) and keeping the same dependent variable. To understand the mechanism for the effect, we also measure conformity (Mehrabian & Stefl, 1995) and appearance related self-discrepancy with an adapted version of Body-Image Ideals Questionnaire (Cash & Szymanski, 1995). Results from this study replicate the findings from Study 1 at the individual level where interdependence scores significantly predict usage of image enhancement tools ( $b=.43$ ,  $t(138) = 2.56$ ,  $p = .012$ ). Further, we find support for the mechanism causing this effect through Hayes (2012) Model 6 (boot strapped serial multiple mediator model) with conformity and self-discrepancy sequentially mediating the link between interdependence and usage of image enhancement tools ( $95\%CI = .037$ ,  $.219$ ).

Study 3 replicates the main effect from Study 2 in a different context by using purchase intention (scale adapted from Grewal, Monroe, & Krishnan 1998) for a complexion correcting skin cream as the dependent variable. Given the causal mechanism of self-discrepancy in Study 2, we hypothesized that interdependents' (positive) attitude towards the cosmetic product will be driven by their perceptions about the product's ability to minimize the gap between ideal and actual self. Conceptualized as the perceived tangible improvement the skin cream can make to the respondent's looks, this was measured using the adapted product improvement scale. As hypothesized, interdependence scores again significantly predict usage of the complexion correcting skin cream product ( $b=.61$ ,  $t(107) = 5.54$ ,  $p = .000$ ). Interdependence also explained a significant proportion of variance in purchase intention scores ( $R^2 = .22$ ,  $F(1, 107) = 30.68$ ,  $p = .000$ ). Further, mediation through tangible improvement perceived by using the product was found to be significant ( $95\%CI = .241$ ,  $.625$ ; Hayes, 2012). In other words, interdependents' attitude towards the product is driven by product's ability to deliver tangible, noticeable improvement in their looks or to the extent it can help minimize the gap between actual and ideal self.

#### Conclusion, Contribution and Future Research

Our work contributes to theory by examining the nuances of cultural variables in the underexplored domain of beauty. Further, we leverage the self-discrepancy theory (Higgins, 1987) in an appearance context to explain the causal mechanism driving the effect. A pertinent future research direction is to investigate ways to minimize self-discrepancy. One potential route is to enhance self-esteem, thus raising the level of self-image, thereby minimizing the gap and eliminating the need to use appearance-enhancing products.

Practically, a sharper understanding of cultural implications on the quest for beauty has strong managerial implications for the \$265 billion beauty industry (by 2017; Lucintel, 2012). More importantly, our findings offer more pervasive implications for consumer well-being and happiness. If the dramatic rise in the number of plastic surgeries is any indication, a lot of women are yielding to the pressure of conforming to the norm and need counseling and intervention to lead fulfilling and anxiety-free lives.

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#### ***How Beauty Work Affects Judgments of Moral Character***

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Consumers devote countless hours and billions of dollars on appearance and beauty practices (i.e., beauty work, Kwan and Trautner 2009) because physical attractiveness leads to numerous positive outcomes (Langlois et al. 2000). However, an odd paradox exists:

attractive people are generally perceived more favorably, but people who put a lot of effort in pursuing attractiveness are generally viewed negatively.

We propose that this occurs because an individual's appearance holds symbolic, informative value in person perception. Attractiveness is perceived as a reliable indicator of fitness, health, and reproductive value, which is largely predetermined genetically (Langlois et al. 2000). Furthermore, people tend to use attractiveness as a global, general indicator of how good or bad an individual's "true nature" is – something people are born with that they cannot change (Dion et al. 1972). Thus, by engaging in high levels of effort to upgrade or change one's appearance, one may also be perceived as masking who they truly are. We posit that extensive beauty work is perceived as indicative of poor moral character because such effort implies that one is misrepresenting one's "true essence" in order to acquire undeserved benefits. We test this effect and downstream consequences across 4 studies, focusing on the beauty work of women since they face the greatest pressure to conform to beauty standards (Fredrickson and Roberts 1997).

In study 1, we show that effort in beauty work influences judgments of moral character and perceived effectiveness in various roles. Female undergraduates were told that "Jenna" spent either 10 minutes or 2 hours getting ready to go out for an evening. Participants expected Jenna not only to have poor moral character (moral, ethical,  $r=.70$ ) but also to be a worse student, friend, sister, daughter, athlete and artist when she put in high relative to low effort in her appearance (all  $p's < .01$ ). Ratings of moral character also mediated the effect of effort on participants' judgment of Jenna, which is consistent with prior research finding that judgments of moral character are perceived as relevant to various domains (Blasi 2005).

In study 2, we show that the effort-morality link is unique to the beauty domain. Female undergraduates ( $N=101$ ) read that Jenna put high or low effort into her beauty or academic work. A 2(effort: low vs. high) x 2(domain: beauty vs. academic) ANOVA revealed a two-way interaction ( $p < .01$ ) where Jenna was rated as having poorer moral character (moral, ethical, genuine, sincere,  $\alpha=.88$ ; Walker and Hennig 2004) when she exerted high relative to low effort on beauty work ( $M_{High}=4.11$  vs.  $M_{Low}=4.70$ ,  $p<.05$ ) but not on academic effort ( $M_{High}=4.90$  vs.  $M_{Low}=4.61$ , *ns*). Given that individuals also serve to gain personally with academic success, the null effect in the academic domain rules out the possibility that negative perceptions of high effort for personal gain drove our effects.

In study 3, we examine the mechanism underlying perceptions of moral character, specifically testing whether perceptions of misrepresenting oneself drive our effects on judgments of moral character. We also examined whether this effort-morality link exists in consumers' expectations for how they would be perceived by others. Female undergraduates ( $N=92$ ) were told that they heard that a new friend spent 10 minutes or 2 hours getting ready (third person) or that a new friend learned the same information about them (first person). We measured moral character using the same items as in study 2 ( $\alpha=.90$ ) and misrepresentation with two items (e.g., to what extent would you believe that she is trying to put forth an image of someone she is not,  $r=.83$ ).

A 2(effort: high vs. low) x 2(perspective: third vs. first) ANOVA found only a main effect of effort on both ratings of moral character ( $p<.01$ ) and perceptions of misrepresentation ( $p<.01$ ). High effort garnered more negative ratings of moral character in both the third person ( $M_{High}=4.19$  vs.  $M_{Low}=5.30$ ,  $p<.01$ ) and first person condition ( $M_{High}=3.73$  vs.  $M_{Low}=5.18$ ,  $p<.01$ ). High effort also led to higher ratings of misrepresentation in both the third ( $M_{High}=4.17$  vs.  $M_{Low}=2.09$ ,  $p<.01$ ) and first person condition ( $M_{High}=4.55$  vs.  $M_{Low}=2.06$ ,  $p<.01$ ). A bootstrapping moderated mediation analysis revealed that misrepresentation mediated the effect of effort on moral character ratings in both the third (95% CI: -.94, -.22) and first person conditions (95% CI: -1.10, -.34).

In study 4, we use an advertising context to identify a boundary condition for our effects. We posit that extensive beauty work signals poor moral character because such behavior is perceived as misrepresenting one's "true essence." This suggests that if we can reframe the meaning of beauty work from reflecting one's true self to reflecting one's desire to enhance one's best qualities that one *already* possesses, the effect of effort should be mitigated. To test this prediction, female Mturk participants ( $N=140$ ) were presented with an

ad for “Perfectskin” foundation that required high or low effort to use and emphasized that the product would allow their true self or best self to shine through.

A 2(effort: high vs. low) x 2(message: true self vs. best self) ANOVA found two-way interactions on both ratings of one’s moral character (same items as prior studies,  $\alpha=.90$ ,  $p<.05$ ), and willingness to purchase Perfectskin ( $p<.05$ ). Participants felt that purchasing Perfectskin would hurt their moral character more when the product required high relative to low effort, but only in the “true self” ( $M_{High}=3.23$  vs.  $M_{Low}=4.22$ ,  $p<.01$ ) and not the “best self” condition ( $M_{High}=3.60$  vs.  $M_{Low}=3.71$ ,  $ns$ ). Similarly, effort influenced participants’ willingness to purchase Perfectskin in the “true self” ( $M_{High}=4.19$  vs.  $M_{Low}=5.28$ ,  $p<.05$ ) but not “best self” condition ( $M_{High}=4.57$  vs.  $M_{Low}=4.52$ ,  $ns$ ). Further analysis confirmed that ratings of moral character mediated the effect of effort on purchase interest but only in the “true self” (95% CI: -1.09, -.25) and not the “best self” condition (95% CI: -.37, .55).

Taken together, our studies provide support for the notion that high effort spent in enhancing one’s attractiveness is indicative of poor moral character because such beauty work implies that one is misrepresenting oneself and preventing others from accurately judging one’s “true essence.”

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### ***Beauty is Good: How Consumers’ Desire to Look Good Affects Product Preferences***

Tess Bogaerts, Ghent University, Belgium\*

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Beauty is highly valued in most – if not all – societies. More and more people care about their physical appearance and try to look good. This desire to be physically attractive is not very surprising as an attractive appearance confers many advantages in both obvious domains, such as dating (Furnham, 2009), and less obvious realms, such as the job market (Frieze, Olson, & Russell, 1991). Nevertheless, little research considers the consumer consequences of the pursuit of physical attractiveness. Obviously, consumers who want to have an appealing appearance may have a stronger tendency to buy products that serve their goal of being beautiful, such as cosmetics. In the current paper, however, we wonder whether they may also be more likely to buy products that do not satisfy their goal of being physically attractive, like a box of chocolates or laundry detergent. This paper investigates the mechanisms by which consumers who pursue physical attractiveness assign more positive qualities to products that simply look good. In particular, we suggest that the preference for products with appealing packages may partly stem from an overgeneralization of the beauty-is-good heuristic that is frequently used to evaluate people (Dion, Berscheid, & Walster, 1972).

To investigate this framework, we ran a first survey study. We measured on 7-point Likert scales to what extent 131 participants believe that (1) products with appealing packages are better products (Appendix A), and (2) beautiful people beget more positive outcomes (Appendix B). To assess their physical appearance aspirations, we administered the Aspiration Index (Kasser & Ryan, 1996). In line with our expectations, we found that the more people aspire to be physically attractive, the more they believe that being beautiful yields several positive outcomes ( $r=.21$ ,  $p=.014$ ), and the stronger their belief that products with attractive packages are generally better products ( $r=.20$ ,  $p=.021$ ). Mediation analysis indicated that especially consumers who want to look good are more likely to believe that products with appealing packages are better products because they seem to have generalized the idea that beauty is inherently good (CI95% [.009, .16],  $p=.013$ ).

Two experimental studies confirm that consumers who want to look good have a stronger preference for products with appealing packages. In Study 2 ( $n=82$ ), we demonstrate that consumers with physical appearance aspirations are indeed more likely to buy a bottle of shampoo with an attractive package compared to an unattractive package because they generally infer quality from package appeal (Figure 2). Moreover, we found that consumers who want to look good are also more likely to buy the product with the appealing package because they have a stronger appreciation for visual product in general (CVPA; Bloch, Brunel, & Arnold, 2003). Study 3 ( $n=104$ ) replicates that consumers who care about their physical appearance do prefer CPGs – laundry detergent, orange juice, cereal, and paper towels – with appealing packages by introducing a boundary condition. We found that when objective quality information is salient, their preference for products with appealing packages disappears as they no longer need to infer quality (Figure 3). The more consumers want to look good, the stronger their preference for products with appealing packages.

Study 4 investigates how important package appeal is to infer quality in comparison with both price and warranty as additional quality cues. A total of 113 participants rated the quality of 20 advertised products on a 100-point slider bar. These advertisements differed on three attributes: price, cash-back guarantee, and packaging. Moreover, we selected three basic, product categories: ketchup, cleaner, and yogurt (Table 1). Conjoint analysis revealed that packaging is the most important signal of quality with a relative importance of 51 percent (Table 2). Moreover, we ran an additional 2 (packaging)  $\times$  3 (product type)  $\times$  4 (price)  $\times$  2 (warranty) mixed-model analysis of variance (ANOVA) with consumers' physical appearance aspirations as between-subjects variable. The analysis showed a main effect of both packaging ( $F(1,1685)=6.43, p=.011$ ) and product type ( $F(2, 1685)=3.43, p=.033$ ) on quality estimations. More importantly, we found one significant interaction effect between packaging and consumers' physical appearance aspirations: The more people pursue an appealing appearance, the more quality they assign to CPGs with an appealing package design ( $F(1,1685)=21.82, p<.001$ ). Thus, consumers who want to look good still count on package appeal to infer quality when other signals of quality are available as well.

Finally, Study 5 shows that consumers who want to look good even assign more quality to products with an appealing package when they could actually consume the product. In this lab experiment, 88 participants tasted and evaluated (0="very bad", 10="very delicious") one of two concealed brands of chocolates. The chocolates were actually identical but were presented in either an attractive or a less attractive box. In line with our expectations, we found a significant interaction effect between physical appearance aspirations and box type on taste evaluation ( $F(1,88)=5.32, p=.02$ ). Specifically, people who aspired to an attractive appearance (mean+1SD) evaluated the same chocolates as better when the box of chocolates was attractive ( $M=7.83$ ) rather than unattractive ( $M=6.55$ ;  $t(1,88)=2.34, p=.02$ ). Figure 4 illustrates that consumers who want to be physically attractive enjoy the same chocolates more (less) when the packaging is appealing (unappealing).

While consumers do know the maxim to never judge a book by its cover, they may still do so for various reasons. The current paper highlights one key reason: Consumers infer quality from products that have attractive packages. Five studies reveal the underlying process of consumers' tendency to follow a beauty-is-good inference rule when evaluating consumer products. Our findings suggest that especially consumers with physical appearance aspirations generalize the idea that beauty is inherently good and apply this belief when making purchase decisions. As such, we contribute to several lines of research. First, we add to research on the impact of product packaging on consumer choice. Second, we contribute to self-determination theory by demonstrating how physical appearance aspirations in particular affect consumers' responses to products. Third, we add to research on lay beliefs regarding market mechanisms and product quality that an individual difference can predict which specific lay belief is chronically used in product evaluation.

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**JCP AE Research and Report**

**4:00pm -4:50pm**

**JCP ERB Meeting**

**5:00pm-6:30pm**

**RECEPTION**

**6:00pm-8:00pm**

**Ballroom**

**WORKING PAPER SESSION 2**

**6:00pm - 7:30pm**

**Ballroom**

***Working Papers: Working Paper Session Two***

***The (Prevention) Focus of Philanthropy: A Goal-directed Perspective on the Effectiveness of Donation Appeals***

Sara Penner, University of Manitoba, Canada\*

Olya Bullard, University of Winnipeg, Canada

Through two lab experiments, we examine the effectiveness of donation appeals from a goal-directed perspective. Applying the framework of regulatory focus theory (Higgins, 1997) we identify that philanthropy appeals to consumers' prevention- focused goals for safety and security. We continue this research into a managerial context and demonstrate that prevention-framed donation appeals are more effective compared to promotion-framed appeals.

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***“The Price Is Right,” But More so on Expanded Scales: Expanded Scales Enhance Number Value Appreciation***

Linda Hagen, University of Michigan, USA\*

Expressing attributes on expanded scales is known to exaggerate perceived differences between options and to enhance that attribute's decision impact. This has been attributed to increases in numerosity. This paper, however, takes a conversational logic perspective and shows in three experiments that expanded scales (e.g., cents) signal that every small subunit counts and cause people to attend to the whole number, whereas contracted scales (e.g., dollars) lead people to abbreviate the number after the first digits (left-digit-effect: Thomas & Morwitz, 2005). Subtle changes in number expression (e.g., using the cents-sign versus dollar-sign) can impact consumers' preferences, offering implications for pricing.

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***Country of Origin Fit: When does A Discrepancy between Brand Origin and Country of Manufacture Reduce Consumer's Product Evaluations?***

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Country of Origin (COO) is an important cue consumers consider when making product evaluations. COO is a multi-dimensional construct for which brand origin and country of manufacture are the two most researched dimensions. Often, brand origin and country of manufacture can be different – a potential consistency or discrepancy which we refer to as COO fit. In two studies, we demonstrate that a lack of COO fit introduces ambiguity into consumers' product evaluations, consequently reducing product evaluations. This effect is moderated by consumer traits and brand positioning strategies.

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***Does Size Matter? Only When They Touch: Package Size and Scale of Contamination***

Chelsea Galoni, Northwestern University, USA\*

Derek Taylor, University of Guelph, Canada

Theodore J. Noseworthy, York University, Canada

Predicated on the law of contagion and recent research on packaging size inferences, we test whether the magnitude of contamination strengthens as the package size of a target product increases. We find that, holding the size of the contaminant constant, a larger target packaging elicits greater feelings of contamination than smaller packaging. Furthermore, the results hold for both positive and negative contagion. Our results not only show that contamination does scale with the size of packaging, but also offer a new way of confirming contamination manipulations.

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***Advertisements as Threats to Competency: Exploring Consumer Tunnel Vision and Mitigating the Effects***

Raymond Lavoie, University of Manitoba, Canada\*

Kelley Main, University of Manitoba, Canada

This research suggests that product advertisements can bolster or threaten consumers' perceived competence. Through a series of two experiments we support a moderated mediation model in which advertisements for products that one did not choose threaten consumers' perceived competence, which in turn leads to negative affect. Threat to competence was mitigated by introducing a time delay before asking the dependent measures. We demonstrate that following exposure to such advertisements, consumers actively seek and derogate competitors' advertisements and process them more systematically than other advertisements. Providing consumers with self-affirmation (via an advertisement which promotes an owned brand) reversed such defensiveness.

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***Feeling Lonely in a Crowd: How Loneliness Affects Product Choice***

Ruby Saine, University of South Florida, USA\*

Our research examines how loneliness affects binary product choice and investigates the psychological mechanism underlying lonely consumers' choice.

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***Why Do Bad Brands Get Blamed?***

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Mansur Khamitov, Ivey Business School, Western University, Canada

Matthew Thomson, Ivey Business School, Western University, Canada

We argue that harmfulness and anthropomorphization lead to decreased punishment through decreased attribution and increased moral standing. Study 1 shows that an essence of harm leads to a decrease in moral standing, mediated by perceptions of hostility. Study 2 furthers this by showing that moral standing leads to increased punishment for transgressions. Study 3 shows that an entity of harm biases judgments of transgressions. Study 4 demonstrates that harmfulness and anthropomorphization lead to increases in agency which in turn lead to increased punishment. Study 5 adds to this, demonstrating a mediating effect of attribution between moral standing and punishment.

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***Product Curvature or Angularity Preferences: A Theory of Self-Concept***

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Rishtee Batra, Indian School of Business, India\*

Peter Boatwright, Carnegie Mellon University, USA

We investigate whether preference for product curvature or angularity may be influenced by self-beliefs about the shape of one's own body. We find that when body shape is made salient, women who perceive their bodies to be curvy, rate curved products higher. A significant covariate is body image monitoring (concern and satisfaction with one's body image). We speculate that evaluation of one's own body caused subjects to enter into "defensive coping" mode, leading to a more favorable evaluation of objects that are perceived similar to oneself.

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### ***Asymmetric Consumer Responses to Brand Crises***

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Previous research demonstrates the detrimental effects of brand crises, yet consumers buying and consuming the affected brand and those not may react differently to a crisis. We examine differential reactions of victims versus observers as a function of crisis severity. Two studies demonstrate that affected brand users may provide firms with a cushion against the devastating impact of relatively low severity crises, yet their brand evaluations no longer insulate firms and actually backfire in severe brand crises, which is mediated by construal level.

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### ***Mental Representation of Ambivalence.***

Amit S. Singh, Ohio State University, USA\*

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An ambivalent attitude has both positive and negative reactions associated with it. In this research, we investigate the underlying structure in which the oppositely-valenced components are stored together; are positive thoughts stored alongside the negative thoughts or are they separated? The implications of storage structure for felt ambivalence are studied. Preliminary results indicate positive and negative thoughts about an object being stored together in memory.

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### ***The Effects of Temperature Cues on Charitable Donation***

Chien-Wei (Wilson) Lin, Hartwick College, USA\*

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Building upon ambient temperature and embodied cognition literature, this research identifies that temperature cue is a critical factor that influences charitable behavior. Findings from two studies reveal that compared to warmth temperature cue, cold temperature cue results in greater monetary donation to the charity. Specifically, the authors verify the process that coldness activates the need of social connection via both mediation (i.e., the effect is mediated by how close the charity is in self) and moderation (i.e., the effect reduces when social connection is made salient by asking to donate time).

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***Why We Like Bundles and I Don't: The Effect of Self-Construal on Product Bundle Evaluation***

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We explore the relationship between self-construal and consumers' evaluation of product bundles. Our findings across three studies indicate that individuals with interdependent self-construal judge product bundles more favorably relative to individuals with independent self-construal. Furthermore, we find that the perceived cohesiveness of the bundle composition is positively associated with the bundle's desirability for interdependent individuals, whereas the effect is not evident among independent individuals. An individual characteristic such as self-construal had not been previously studied in the context of product bundle evaluation, and our studies suggest a personalized and culture-dependent approach to constructing and marketing product bundles.

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***Fewer When Mixed: When Food Presentation Format Biases Consumers' Perceptions of Calories and Fat***

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Angelika Dimoka, Temple University

Will Hampton, Temple University

Dipankar Chakravarti, Johns Hopkins University

Meng Zhu, Johns Hopkins University

We conducted two studies to investigate whether consumers' perceptions of foods' healthfulness are biased by the format in which it is served: when the ingredients are mixed together versus separate. In study 1, participants tasted four samples of healthy (cereal) or unhealthy (candy) food in either a mixed or separate format. The candy, but not the cereal was perceived as marginally healthier in a mixed (versus separate) format. In study 2, participants systematically underestimated the amount of calories and fat in candies when asked to imagine eating the food in a mixed (versus separate) format.

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***For a Creative Mind, Solitude Brings the Richness of Self***

Byungik Yoon, Hongik University\*

Nara Youn, Hongik University\*

This research investigates the relationship between solitude and creativity, tests the underlying processes that explain it, and examines the brand preference of solitary individuals. The findings indicate that solitude influences various outcomes of creativity. Self-reflection and happiness mediate the effect of solitude on creativity.

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***“It was Not my Fault, But I Could have Prevented it”: The Role of Consumer Perceived Control Over Stressful Service Experiences***

Natália Araújo Pacheco, Federal University of Rio Grande do Sul, Brazil\*

Maggie Geuens, Ghent University, Belgium\*

Cristiane Pizzutti dos Santos, Federal University of Rio Grande do Sul, Brazil\*

Even when consumers blame a company for a stressful service experience, these consumers may perceive that they could have done something to prevent the stressful situation (past control), that they can control their emotions and thoughts about it right now (present control), that they can prevent it from happening again (future control), and that such situation is unlikely to reoccur (future likelihood). We demonstrate in two studies that this temporal model of perceived control may have additional explanatory power regarding consumer emotional and behavioral reactions after a stressful service experience when compared to the typically used attribution and appraisal models.

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***How a Variable-Sum Mindset Increases Instrumental Social Relationships***

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Across two studies, the current research suggests that a variable-sum mindset (vs. zero-sum mindset) can lead individuals to pursue instrumental social relationships, by activating an exchange-oriented mindset. Also, this effect becomes more prominent when consumers have a negative outlook on the economy. These results suggest that cooperative motives can sometimes increase instrumental behaviors even more than competitive motives.

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***Do Consumers Search Far and Wide or High and Low? It Depends on their Regulatory Focus.***

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Joseph Lajos, Department of Marketing, Faculty of Business and Economics, University of Lausanne

The proposed research project examines the relationship between consumers' regulatory orientation and two important product assortment characteristics – assortment structure and level of variety. We hypothesize that promotion-oriented consumers are more satisfied when choosing among products in broad category structures, whereas prevention-oriented consumers are more satisfied when choosing among products in narrow category structures. Furthermore, we hypothesize that promotion-oriented consumers are attracted to product assortments with high levels of variety and consume more when assortment variety is high versus low, whereas prevention-oriented consumers are attracted to product assortments with low levels of variety and consume less when assortment variety is high.

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***You are What (and How, and with Whom) You Eat: Effects of Food Identity on Preferences, Choice and Consumption***

Lauren Grewal, University of Pittsburgh, USA\*

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Nicole Verrochi Coleman, University of Pittsburgh, USA

Though the bulk of consumer research in the food domain has focused on peoples' tendencies to indulge or restrain their eating, we propose that variance on this dimension does not capture the totality of consumers' relationship with food. To provide a richer conceptualization of individuals' experiences with food, we propose four distinct food identities, measured using validated indices. We also show that these identities reliably affect individuals' preferences and self-concepts.

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***The Group Effect - How Food Products Look More Attractive in Group than Individually***

Katrien Cooremans, Ghent University, Belgium\*

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Does the cheerleader effect also hold for food products? We investigated whether the presentation of food items (in group vs. individually) affects consumers' perceptions. Our findings suggest that presenting a particular food item in a group of (almost) identical items, enhances its perceived attractiveness compared to when the same item is presented individually. The enhanced perceived attractiveness also translates in a higher purchase intention. Importantly, we find a somewhat different group effect for healthy and indulgent food, indicating a different underlying process. Follow-up studies will investigate which process underlies the effect for healthy and indulgent food respectively.

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***How to be Both More and Less Happy: Think Like a Greedy Person!***

Goedele Krekels, Ghent University, Belgium\*

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Since the 1980's, two thinking styles have been put forward to explain choice behavior: absolute and relative thinking. Though the first is more in accordance with rational economic theory, the second has been more predictive of real-life economic behavior. In this project we propose greedy people to exhibit an intermediate thinking style, incorporating both absolute and relative changes. This partial thinking style leads them to be happier than others when relative but not absolute changes from a reference point are low, but less happy when these relative changes are high.

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***Gift-Giver's Self-Indulgence is Differentially Impacted by Different Gift-Giving Motivations***

Ning Chen, European School of Management and Technology, Germany\*

Francine Espinoza Petersen, European School of Management and Technology, Germany

This research suggests that different gift-giving motivations influence a gift-giver's self-indulgence differently. Gift-givers with an altruistic motivation tend to be more self-indulgent than gift-givers with a self-interested or a compliance-with-social-norm motive. We find that this effect is mediated by happiness and moderated by the perceived appropriateness of self-indulgence.

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***Want to Express but Have to Suppress: Effects of Self Construal on emotional Suppression and Expression***

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Wendy Yan, University of Manitoba

Nidhi Agrawal, University of Washington

Relationship partners from different culture groups may experience different dynamics when it comes to relationship conflicts compared to relationship partners from the same culture. When conflict arises, negative emotions flood in. How relationship partners express their emotions and their subsequent effect on the relationship may very well depend on the cultural norms of relationship partners. However, surprisingly, cross-cultural studies focusing on negative emotional expression and suppression are rarely addressed. This research aims to examine the effects of self construals on negative emotional expression.

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***Navigating Uncommon Ground: Consumer Responses to Word-of-Mouth that Reveals Discrepant Attitudes***

Daniel Brannon, Arizona State University, USA\*

Adriana Samper, Arizona State University, USA

Our study investigates the consequences of WOM that makes attitude discrepancies salient. We find that WOM transmitters engage in upward revision of negative product and service attitudes when close (versus distant) others have a dissimilar (e.g. positive) attitude. In contrast, they do not engage in similar, downward revision of positive attitudes when close (versus distant) others have a dissimilar (e.g. negative) attitude. We posit that this is because negative experiences are episodically "remembered," and more likely to be seen as isolated events in light of another's positive experience, while positive experiences are semantically "known" and are more difficult to revise.

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***Consumers Strategically Time Word-of-Mouth Transmission for Self-Enhancement***

Jin Myoung Kim, Seoul National University, Republic of Korea\*

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Jinwoo Kim, Seoul National University, Republic of Korea

Haejoo Han, Seoul National University, Republic of Korea\*

We propose that consumers strategically time their word-of-mouth (WOM) transmission for self-enhancement. In an experiment simulating the context of sales promotion, we found that participants showed a greater intention to transmit WOM about their purchase after promotion than during promotion, because they were more likely to believe that they will be seen as smart consumers if they transmitted WOM after promotion. A mediation analysis revealed that self-enhancement motives drove this effect. Altruism was not a significant mediator leading to the difference between post-promotion and during-promotion WOM transmission intentions.

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***What is it that You're Carrying? Implicit Self-Theories and Shopping Cues in the Retail Environment***

Freeman Wu, Arizona State University, USA\*

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This research examines the status signals that consumers expect observers to pick up on when they are carrying a conspicuously branded luxury shopping bag versus handbag, and how these expectations in turn shape their self-perceptions of status and their subsequent behavioral intentions. We demonstrate that consumers experience lowered self-perceptions of status and exhibit more inhibition-related behaviors when carrying the handbag versus shopping bag. Furthermore, results show that not everyone experiences these changes; it depends on the individual's implicit self-theory. Entity theorists experience decreased feelings of status when carrying the handbag versus shopping bag, whereas incremental theorists are unaffected.

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***All for One and One for All: Individual Vicarious Goal Fulfillment in Group Contexts***

Katina Kulow, University of South Carolina, USA

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We examine the impact of group identification on individual goal pursuit in contexts where an overlap in goals exists at both the individual and group levels. We show that when a group member highly identifies with his or her group, the vicarious goal fulfillment of that individual's goals which stems from the group's perceived progress towards a similar group goal, results in disengagement from continued individual goal pursuit when one's individual goals do not remain salient.

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***The Influence of Construal Levels on the Experience of Post-purchase Regret***

J. April Park, Fort Hays State University, USA\*

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Construal Level Theory provides a promising way of explaining consumer behaviors. Using the CLT framework, the current study examined whether or not temporal distance from an event and types of goods affect consumers' purchase intention and willingness to expedite shipping. Additionally, this study investigated the impact of high and low levels of construal on post-purchase regret. Results showed that a higher level of construal, measured by a distant event and experiential goods, led to a higher level of purchase intent and a lower level of post-purchase regret.

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***Do Touch Screen Users Feel More Engaged? The Impact of Touch Interfaces on Online Shopping***

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This study examined the potential effects of touch interfaces on online shoppers' purchase-related decisions. Results showed that using a touch interface led to higher engagement with shopping among low involvement product shoppers, and higher engagement was positively associated with most purchase decision measures, including purchase intentions. However, using a touch interface had a negative impact on brand name recall. The findings of this study highlight the role of a touch interface as a new retail cue for online shoppers' engagement beyond traditional retail cues.

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***The Unethical Gift: The Moral Dilemma of Accepting It***

Marta Pizzetti, Università della Svizzera italiana, Switzerland\*

Peter Seele, Università della Svizzera italiana, Switzerland

Michael Gibbert, Università della Svizzera italiana, Switzerland

This research focused on investigating how consumers accept products with unethical attributes (i.e. product whose production harm animals) in a context characterized by strong social pressure, such as the gift exchange. The authors examined whether and how gift exchange influences the unethicality perception through the moral disengagement process. Findings of two experiments illustrated that recipients are willing to accept an unethical product when it's given by a friend as a gift, and are subsequently engaged in the moral disengagement process which reduces the unethicality perception. However the product creates negative emotions, especially when the product is psychological close.

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***Conflicting Attitudinal Norms and Self-Persuasion: The Role of Social Identity in the Mere Thought Effect***

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Research demonstrates that reflection on one's attitude heightens polarization, with findings based on the argument that individuals' reflect on attitude-consistent information. The present research posits that social identities bias the nature (or consistency) of the information reflected upon and thus the direction of attitude change as a function of that reflection. Across two experiments, individuals exhibited significant shifts toward attitudinal norms as a function of both sufficient opportunity for reflection (Experiment 1) and heightened salience of a relevant social identity (Experiment 2). These findings, then, highlight the importance of social identities and the attitudinal norms they elicit in altering self-persuasion.

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***How Priming Collectivism or Individualism can Impact Motivations and Increase Participant Satisfaction in Online Surveys***

Alexander Davidson, Concordia University, Canada\*

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Despite the benefits of online data collection for consumer behavior researchers, information about how to improve participant satisfaction is scarce. The current research predicts and finds that a collectivism prime will generate higher participant satisfaction due to an increase in pro-social motivations. In contrast, an individualism prime will generate higher satisfaction due to greater financial motivations. This research carries practical implications for consumer behavior researchers looking to improve the quality of responses from online surveys.

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***Keep an Eye on Moving Prices! The Effect of Visual Dynamism on Price Perceptions***

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Arun Lakshmanan, State University of New York at Buffalo, USA

This paper proposes that dynamic information presentation can bias how consumers perceive prices. Specifically, this paper focuses on how visual dynamism in graphical presentation of price history affects consumers' price volatility perceptions. Two studies show that when graphical information of price history is dynamically (vs. statically) presented, consumers perceive a price as more volatile. Further, this effect is moderated by monetary promotions such as a price discount. Overall, this paper extends the literature on information presentation biases in consumer perceptions by examining the dynamic aspects of data presentation in the domain of price cognition.

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***The Impact of Image-Elicited Arousal on Consumers' Preferences for Self-Other Distance in Service Consumptions***

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Utilizing pictures as the major persuasive tool, display advertising is becoming an increasingly important format of online service advertising. In such a context, this study examines how online service ads can use a sharing cue vs. a solitude cue to stimulate consumers' purchase intentions. Based on the proposed psychological mechanism via arousal management, this research further highlights several important boundary factors such as the color hue of the ad picture and the ambient temperature of the consumption experience. Two experimental studies are proposed for empirical examination. In the end, a general discussion on potential theoretical contributions and managerial implications is provided.

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***Does Layout Matter? The Effect of Online Circular on Consumer Memory of Banner Ads***

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Ron Faber, University of Minnesota, USA

Recently, retailers such as Walmart and Walgreens have switched from traditional print circulars to digital circulars which consumers can browse using store websites, smart phone applications, and e-mails. When consumers are browsing for products in an online circular, banner ads are usually treated as distracters. This study shows that different online circular layouts (low vs. high perceptual load) affect memory for banner advertisement. Low-level perceptual load, easy to process circulars improve memory for banner ads compared to high perceptual load circulars.

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***First Time's the Charm with a Lucky Penny? The Effects of Superstitious Beliefs on Consumer Risk-Taking Behavior.***

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Consumer superstition has been found to affect choices and behaviors in the marketplace. The influence of superstitious belief is likely to exist in most risk-taking activities. Existing research identified two types of superstitious beliefs – passive and proactive. Proactive superstitious consumers believe in ritual superstitious behaviors and like to take control of their fate, whereas passive superstitious consumers believe that fate is beyond their control. The results from this study show that passive superstitious consumers are more likely than their proactive counterparts to make risky decision when they possess a lucky charm.



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***The Effect of Executive Attention on Discount Price Estimation***

Esther Kang, University at Buffalo – SUNY, USA\*

Arun Lakshmanan, University at Buffalo – SUNY, USA

Debabrata (Debu) Talukdar, University at Buffalo – SUNY, USA

This paper aims to explicate the role of executive attention in mental price computation under different computation conditions (simultaneous versus sequential). Our findings suggest that errors may be caused primarily due to individuals' ability to control attention. Using individual differences in executive attention – Working Memory Capacity (WMC), we demonstrate that lower WMC individuals perform better in simultaneous (e.g., single discount) calculation contexts (compared to higher WMC individuals). However, this pattern reverses when discount computation is undertaken in sequential calculation conditions. We discuss this finding in light of current numerical processing and working memory theories.

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***Effects of Self-Control on Variety Seeking Behavior***

Cansu Karaduman, HEC Lausanne, Switzerland\*

Joseph Lajos, HEC Lausanne, Switzerland

When considering each phase of the customer journey online retailers must make decisions about the variety of product options to display. The purpose of this paper is to help marketers decide how much variety to present to consumers. We provide evidence from three online studies that consumers with depleted self-control include less variety in their choice sets than consumers whose self-control is not depleted. We hypothesize that this effect occurs because consumers with depleted self-control are less able to process the additional information typically associated with more varied choice sets.

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***Drivers of Satisfaction and Dissatisfaction for Social Commerce Users***

Moon-Yong Kim, Hankuk University of Foreign Studies, South Korea\*

Minhee Son, Dongguk University, South Korea

Chunhao Lu, Dongguk University, South Korea

In the current research, we explore the antecedents and consequences of satisfaction and dissatisfaction for s-commerce users purchasing food service in China. The proposed research model incorporates characteristics of website (online) and food service (offline) participating in s-commerce to investigate the key determinants of consumers' satisfaction and dissatisfaction in s-commerce

and to examine the relationships between satisfaction/dissatisfaction and repeat-purchase intentions. In addition, we explore the moderating effect of s-commerce experience on the relationships between satisfaction/dissatisfaction and repeat-purchase intentions.

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***The Influence of Reward Progress Rates, Program Magnitudes, and Step Sizes of Reward Programs on Consumer Choice***

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Jane Park, University of South Carolina, USA

We examine whether (1) the effect of program magnitude on choice between utilitarian and hedonic rewards varies depending on the presence or absence of unambiguous step sizes; and (2) the interactive effects of program magnitude and the presence or absence of unambiguous step sizes on choice differ according to the reward progress rates.

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***Consumer Vulnerability and Religious Dependence among Bottom of the Pyramid Consumers***

Thai Hai Duong, Essec Business School, France\*

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Greater numbers of multinational firms are engaged in bottom of the pyramid (BOP) initiatives aimed at an untapped market of 4-5 billion people earning less than \$2 a day in emerging markets to expand market coverage and make a difference to the poorest consumers of the world. This study investigates the BOP consumers by employing the World Values Survey (2014) dataset to better comprehend the role of consumer vulnerability and religious dependence in their consumption activities.

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# Saturday, 28 February 2015

Power Yoga  
7:00am - 8:00am  
Clara Vista Room

REGISTRATION  
7:00am-3:45pm

SCP Advisory Panel Breakfast Meeting  
7:00am - 8:00am

BREAKFAST  
7:30am-8:15am

SESSION 5  
8:15am-9:30am

## ***Symposium: New Perspectives on Power: Discovering Novel Effects of Power In Consumer Social Relations***

**Chair:** Daniel Brannon, Arizona State University, USA

### ***Power Does Not Always Corrupt: Descriptive Versus Prescriptive Expectations Moderate the Relationship between Power and Unethical Behavior***

Miao Hu, University of Hawaii at Manoa\*

Derek Rucker, Northwestern University, USA

Adam Galinsky, Columbia University, USA

Imagine a consumer who stops by Starbucks for a morning coffee. Imagine further that the cashier accidentally gives this consumer an extra \$10 in change. Would the consumer return the extra money or would he savor his coffee along with the free \$10? Similarly, what determines whether a consumer reports a product failure due to user error or genuine defect? These are two examples of common consumer choices that involve a decision between lying and telling the truth. Perhaps seeming to be small and isolated instances, consumers' unethical behavior can collectively have a real financial impact on companies and brands.

Although many factors may feed into consumer decisions on unethical behavior, past research has identified consumers' sense of power as one important moderator for such decisions. The powerful devalue others and see the less powerful as objects of manipulation (Kipnis 1972). Also, high-power participants engage in more cheating behavior compared with low-power participants (Lammers, Stapel, and Galinsky 2010).

In this research, we propose the relationship between power and unethical behavior can be moderated by whether people focus on descriptive or prescriptive expectations and norms tied to power. Recent research finds that expectations associated with power,

represented as mental associations or stereotypes related to behavior in powerful or powerless roles, affect power-related behavior in multiple domains (Rucker, Hu, and Galinsky, 2014). However, no work has examined how different types of expectations affect power or how expectations of power relate to unethical behavior. We propose that expectations can be divided between descriptive and prescriptive expectancies. Specifically, people might consider either the behavior they believe the powerful or powerless actually engage in (descriptive expectations), or the behavior they think the powerful or powerless should engage in (prescriptive expectations). For instance, people may expect that the powerful should not engage in unethical behavior (prescriptive) but at the same time expect them to actually engage in unethical behavior (descriptive). As people can behave in a manner consistent with activated associations and expectations (Bargh, Chen, and Burrows 1996; Dijksterhuis and van Knippenberg 1998), we hypothesize that activating descriptive expectations of power might lead the powerful to cheat more, while activating prescriptive expectations of power might lead the powerful to cheat less. Our first study sought to test whether people do in fact have distinctive expectations towards power and unethical behavior. Our second experiment directly examines how these expectations shape unethical behavior.

*Study 1:* In a 2 (type of expectation: descriptive vs. prescriptive)  $\times$  2 (power: high vs. low) between-subject design, participants (N = 202) were asked about either how they thought the powerful/powerless would behave (descriptive expectations) or how the powerful/powerless should behave (prescriptive expectations) when it came to cheating and behavior immorally. We found a significant interaction effect emerged for unethical behavior,  $p < .001$ . Supporting our hypothesis, when focused on descriptive expectations, participants reported they expected powerful people to act more unethically compared with powerless people,  $p = .002$ , replicating past research (Lammers et al, 2010). However, the findings reversed when participants focused on prescriptive expectations. Participants reported that powerful people ought to act less unethically compared with powerless people,  $p = .03$ .

*Study 2:* The second study examined how unethical behavior was affected by activating descriptive versus prescriptive expectations associated with power. The design of the experiment was a 2 (level of power: high vs. low)  $\times$  2 (type of expectation: descriptive vs. prescriptive) between-subject design with an external baseline condition. Participants (N = 226) first completed a recall task modified from Galinsky, Gruenfeld, and Magee (2003) that manipulated both power and type of expectations (see Rucker, Hu, and Galinsky 2014). Participants recalled an event in which they possessed or lacked power and were asked to focus on either “how people in this role usually behave, that is, how they actually or typically behave,” (descriptive) or “how people in this role should behave, that is, how others hope or ideally wish they would behave,” (prescriptive). Participants in the baseline condition were instructed to recall a trip to the grocery store. Participants were then directed to an ostensibly unrelated task in which they were asked to read a scenario involving an unethical behavior they might encounter in daily life (Detert, Treviño, and Sweitzer 2008). The scenario describes a consumer accidentally receiving an extra ten dollars in change from Starbucks and walking away with it. Participants are asked to what extent they would engage in the behavior.

A between-subject ANOVA revealed a significant two-way interaction between power and type of expectations,  $p = .001$ . Among participants focused on descriptive expectations (i.e. “usually behave”), high-power participants were more likely to engage in the unethical behavior compared with low-power participants,  $p = .03$ . However, among participants who focused on prescriptive expectations (i.e., “should behave”), high-power participants were less likely to engage in the unethical behavior compared with low-power participants,  $p = .02$ .

*Conclusion and Contributions.* These findings suggest that descriptive versus prescriptive expectancies foster contrasting behavior patterns with regard to the relationship between power and unethical behavior and introduce important implications for understanding unethical behavior in the consumer domain.

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## *La Vie en Rose at the Top? Why Positive versus Negative Information Goes Up Versus Down in a Hierarchy*

Christilene du Plessis, INSEAD, France\*

David Dubois, INSEAD, France

Understanding word-of-mouth (WOM) is crucial to both managers and academics because brand successes and downfalls often depend on the type of information people share (Berger and Milkman 2012). While past efforts have focused on the effect of sender's motivation (e.g., self-enhancement; DeAngelis et al 2012), little work has looked into how the relationship between a sender and a recipient affects what type of information gets transmitted. We investigate a key feature permeating many social interactions: the hierarchical relationship between the sender and the receiver. Specifically, we aim to shed light on *when* consumers share more positive or negative WOM as a function of their hierarchical relationship with the message recipient. Hierarchies are pervasive in social, organizational and even familiar interactions and refer to the implicit or explicit rank order of individuals or subgroups with respect to a valued social dimension (Magee and Galinsky 2008). Our reasoning stems from findings that individuals tend to be more concerned about impressing other people in positions above them in the social hierarchy than below them (Gardner and Martinko 1988). Given self-enhancing statements and flattery occur more often in the presence of audiences that are higher in the social hierarchy (Ralston 1985; Kipnis and Vanderveer 1971), individuals might be more motivated to emphasize positive aspects of their experiences. Put simply, we hypothesize that the higher a recipient is in the social hierarchy relative to the sender, the more positive the information the sender will share with the recipient.

We also investigate an important moderator of this effect – whether information transmission occurs in a power or status hierarchy. Power hierarchies refer to organizational structures where higher rank is associated with greater power - control over valued resources. Status hierarchies refer to organizational structures where higher rank is associated with greater status – the amount of respect one has in the eyes of others. While some organizational structures focus on status differences, others foster differences in power (Magee and Galinsky 2008). We propose that if people are indeed motivated to alter the content of their WOM messages because they may gain something in return, our effect will be stronger in power hierarchies than status hierarchies as status hierarchies do not allow for the possibility of potential payback from the message recipient. These ideas are tested across two experiments.

In Experiment 1, participants read a review for a car featuring an equal number of pros and cons. Next, participants were asked to send a WOM message about the car. Key to the experiment, they were either instructed to send a WOM message to someone higher (high hierarchy condition) or lower (low hierarchy condition) in their company. To communicate this difference, participants were told that their task was to share a message to Paul, presented as their boss (HH) or employee (LH). To increase the hierarchical divide between the sender and the recipient, participants were presented with a graphical representation (i.e., a tree graph) representing Paul as either above (HH) or below (LH) them in the tree. Next, participants wrote their messages. We counted the number of pros and cons in the message, and computed a valenced index (number of pros less the number of cons and divided by the total number of thoughts). Results indicated participants' message was significantly more positive when they addressed a recipient higher in the company hierarchy than when they addressed someone lower,  $p < .01$ .

Experiment 2 manipulated whether senders and recipients were embedded in power hierarchies (where the asymmetry in relationship is based on power differences) or status hierarchies (where the asymmetry in relationships is based on status differences). Specifically, we varied whether or not the recipient, a team leader, could promote the sender (power) or not (status; Fast, Halevy and Galinsky 2012). This is consistent with the view that power is associated with agency (Rucker, Galinsky and Dubois 2012) while status reflects the respect associated with social rank (Magee and Galinsky 2008). Participants were randomly assigned to one of three conditions

(peer, high power, high status). In the peer condition, participants were told they had to work in a team on a number of tasks in which all team members were peers. In the high status condition, participants were told that they were to work within a team, on a number of tasks under the guidance of a team leader who could not promote them. In the high power condition, participants were told that the team leader could promote them to be the leader in the next task. We hypothesized that subjects would be more motivated to send positive information to a high power recipient than to a peer or a team leader with high status. After being assigned to their team, participants read the same car review used in Experiment 1 and shared a message about the car to a team member (peer condition) or the team leader (high status and high power conditions). Participants' messages were analyzed with an automated text analysis (Pennebaker et al 2007) to identify the number of positive emotion words. More positive emotion words were used in emails written to a high power recipient than to a peer or a high status recipient ( $p < .05$ ). Taken together, the results contribute to our understanding of when and why valenced information is shared within power and status hierarchies.

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### ***Power and Benevolence: Consumers' Lack of Power Can Increase or Decrease Prosocial Behavior***

Dan Schley, Ohio State University, USA\*

Derek Rucker, Northwestern University, USA

Charitable organizations often depend upon individual acts of generosity and benevolence. And, everyday individual acts of kindness affect whether a homeless person is fed or goes hungry on a given evening. Given the importance of understanding why people do and do not help others, marketing researchers have sought to understand psychological factors that determine consumer's propensities toward benevolence and broader prosocial behaviors (e.g., Lee and Shrum 2012; Lui and Aaker 2008).

Recent work suggests that power is one factor that can affect prosocial behavior. A psychological sense of having or lacking power fosters a mindset that affects how people approach and interact with the world. With regard to prosocial behavior, states of low power produce more other-focused behavior (see Rucker, Galinsky, and Dubois 2012; Rucker, Dubois, and Galinsky 2011). While extant data largely support the main effect that low power increases prosocial behaviors, the present work proposes that the relationship between power and prosocial behavior is more dynamic in ways previously unexamined.

We propose that although low power produces communal orientations that facilitate prosocial behaviors, low power is also associated with a concern for one's standing within a hierarchy (Rucker and Galinsky 2008; Worchel, Arnold, and Harrison 1978). Because of this concern, we introduce a novel hypothesis to the literature: those in a low-power state will actively prevent those beneath them from rising up. Inherently, a prosocial behavior has an implicit opportunity cost. Donating \$50 to a charity decreases a consumer's ability to spend that \$50 on oneself. We propose that when people are focused on their relative standing and engaging in prosocial behavior would threaten such standing, people may engage in less prosocial behavior to protect their relative standing. Put differently, the natural communal tendencies of low-power individuals may be overridden by concerns about their relative standing. In contrast, when relative standing is not salient, we propose that low-power individuals will exhibit increased prosocial behavior, replicating prior research.

*Experiment 1.* In addition to manipulating power (see Galinsky, Rucker, and Magee 2014), we also varied whether cost-to-relative standing was salient. In the not-salient condition, participants were simply asked how much they would like to donate to a charity. In the salient condition, participants were told that they had \$50 in disposable income available to allocate to donating and spending on themselves. Here, when a participant allocated an amount to be donated (e.g., \$25) they observed an increase in the donation bar and

an equivalent decrease in the bar indicating the amount they kept to spend on themselves. Thus, for every dollar that the participant donated, they observed a \$1 decrease in their ability to spend money on themselves. We found a significant interaction between power and salience,  $F(1, 198)=10.39, p=.002$ . In the costs-to-relative-standing-not-salient condition results indicated that low-power participants donated significantly more,  $M_{\text{LowPower}}=\$29.21$ , than high-power participants,  $M_{\text{HighPower}}=\$17.71, F(1, 97)=4.63, p=.03$ . In contrast, in the costs-to-relative-standing-salient condition, low-power participants donated significantly less,  $M_{\text{LowPower}}=\$12.00$ , than high-power participants,  $M_{\text{HighPower}}=\$19.75, F(1, 101)=7.48, p=.007$ .

*Experiment 2.* In experiment 2 participants were told that they had \$75 in disposable income and that they were thinking of purchasing a birthday present for a coworker. In the cost-to-relative-standing-not-salient condition participants simply provided a number for the amount that they were willing to spend on their coworker's present. In contrast, participants in the cost-to-relative-standing-salient condition were presented with the same constant sum bars as in experiment 1, highlighting that a dollar spend on the other person was one dollar lost to oneself. We found a significant power  $\times$  salience interaction,  $F(1, 196)=7.29, p=.008$ . In the cost-to-relative-standing-not-salient condition low-power participants spent significantly more on their coworker's present,  $M_{\text{LowPower}}=\$24.56$ , than high-power participants,  $M_{\text{HighPower}}=\$18.48, F(1, 99)=6.92, p=.01$ . In contrast, when costs to relative standing was made salient, low-power participants spent marginally less,  $M_{\text{LowPower}}=\$16.85$ , than high-power participants,  $M_{\text{HighPower}}=\$20.85, F(1, 97)=3.50, p=.065$ .

*Experiment 3.* The final experiment tested whether concerns for relative standing mediated the decreasing willingness of low power participants to behave prosocially. Participants in experiment 3 responded to a hypothetical prosocial scenario that highlighted the costs of the prosocial behavior to their own relative standing and completed a measure of sensitivity to relative standing. Results indicated that participants induced into a state of low power were less likely to exhibit the prosocial behavior,  $M_{\text{LowPower}}=5.65$ , than baseline,  $M_{\text{Baseline}}=6.09, F(1, 187)=5.26, p=.02$ , and high-power participants,  $M_{\text{HighPower}}=6.20, F(1, 187)=8.13, p=.005$ . Additionally, low-power participants indicated marginally stronger sensitivity to relative standing,  $M_{\text{LowPower}}=4.14$  ( $SD=1.82$ ), than baseline participants,  $M_{\text{Baseline}}=3.54$  ( $SD=1.69$ ),  $F(1, 187)=4.37, p=.06$ , and a significantly stronger sensitivity than high-power participants,  $M_{\text{HighPower}}=3.47$  ( $SD=1.79$ ),  $F(1, 187)=4.37, p=.04$ . Importantly, mediation analyses indicated a significant indirect effect of power on prosocial behavior through sensitivity to relative standing, (95% CI -0.01 to -0.14), supporting mediation.

This paper provides a more nuanced perspective for the role of power on prosocial behaviors. Consistent with prior research, low power can facilitate prosocial behaviors. However, novel to our paradigm, when concerns for relative standing are made salient, low power can foster less prosocial behavior. These findings further highlight the dynamic nature of power by demonstrating the interplay between communal orientations and protecting relative standing. In addition, this work offers insight into charitable giving behavior by demonstrating when people of different positions of power may give.

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### ***Putting on a Show or Showing My True Power? Exploring Self-Verification versus Self-Enhancement Motives in Compensatory Consumption***

Daniel Brannon, Arizona State University, USA\*

Naomi Mandel, Arizona State University, USA

A central finding in the power literature is the relationship between power and compensatory consumption. Namely, existing research suggests that powerless individuals are more likely to consume status products, compared to those who feel powerful (Rucker and

Galinsky 2008; 2009). However, despite these findings, there is ample anecdotal evidence that the inverse of this relationship is also true.

Consider, for example, a recent New York Times article, in which administrators and students at Harvard Business School lamented over the existence of “Section X,” an ultra-exclusive campus society in which the wealthiest and most powerful HBS students engage in lavish parties, vacations and luxury spending. While this example illustrates an instance of the powerful consuming high status products, there are also examples of the powerless consuming low status products. For instance, the website *People of Walmart* pokes fun at the plethora of Walmart customers who show up to the store wearing the most unflattering clothing, hairdos, and makeup. Considering that Walmart’s average customer has a household income of around \$30,000, this behavior also seemingly contradicts the notion that the powerless always desire to conspicuously consume and display status.

In the current research, we examine one possible explanation for these discrepancies by looking at how consumers signal power in close versus distant social relationships. We expect that consumers interacting with close others will be more likely to accurately signal their power, consistent with self-verification goals (Swann, Rentfrow, and Guinn 2003). In contrast, consumers interacting with distant others should send enhanced signals of their power, consistent with compensatory self-enhancement goals (Sedikides 1993). In three studies we show that consumers thinking about interactions with close others will be motivated to self-verify their power by choosing products whose status accurately signals their power. In contrast, we show that participants thinking about interacting with a distant other engage in compensatory self-enhancement of their power.

*Study 1:* We conducted a 2 (social distance: high vs. low) x continuous (power) between subjects study. In the low distance condition, we asked participants to write about a significant other (e.g. parent, spouse, friend). In the high distance condition, we asked participants to write about a loose acquaintance (Kraus and Chen 2009). All participants then rated their preference between Rolex and Timex watches (Mandel, Petrova, and Cialdini 2006). We expected participants in the low distance condition to self-verify their power, such that lower, compared to higher, power would be associated with greater preference for the Timex over the Rolex. In contrast, we expected participants in the high distance condition to self-enhance their power, such that lower, compared to higher, power would be associated with greater preference for the Rolex over the Timex. We found a significant interaction between social distance and power  $t(286) = 2.12, p = .04$ . Further, we found a significant slope, consistent with self-verification motives, in the low distance condition ( $t(286) = 2.37, p = .02$ ), but a non-significant self-enhancement slope in the high distance condition ( $t(286) = -.53, p = .53$ ). Finally, we found evidence of mediated moderation underlying our effects, such that greater self-verification of power in the low, compared to high, condition drove increased preference for the Rolex over the Timex (95% CI: [-2.44 to -.01]).

*Study 2:* We used a different manipulation to prime high versus low social distance. Specifically, we made participants think about relationships with cooperative versus competitive others. We posited that participants would view cooperative others as being socially closer than competitive others, which would activate self-verification, as opposed to compensatory self-enhancement motives. We conducted a 2 (social distance: high vs. low) x continuous (power) between subjects experiment. Participants described a situation in which they either cooperated or competed with another individual (Toma, Yzerbyl, Corneille 2009) and then indicated their preference between Lexus and Kia automobiles. We again found a significant interaction between social distance and power ( $b = 8.84, t(145) = 2.29, p = .02$ ). In the low distance (e.g. cooperation) condition, we again found a significant slope indicating self-verification motives ( $t(145) = 2.15, p = .03$ ). In the high distance condition, we again found a non-significant slope ( $t(145) = -.106, p = .29$ ). In addition, we again found evidence that greater self-verification of power in the low, compared to high, distance condition increased preference for Lexus over the Kia (95% CI: [-4.99 to -.02]).

*Study 3:* We conducted a 2 (social distance: high versus low) x continuous (power) x continuous (materialism) between subjects experiment. We posited that materialistic, compared to non-materialistic, individuals would be more likely to display self-enhancing



purchasing behavior in the high distance condition, as well as self-verifying purchasing behavior in the low distance condition. To manipulate social distance, we primed all participants to anticipate an interaction with a new person. Following Kraus and Chen (2009), participants in the low distance condition were reminded of a significant other after being primed to anticipate the interaction, while participants in the high distance condition were not. According to the social-cognitive model of transference (Anderson and Cole 1990), merely thinking about a close other, compared to not, prior to an anticipated interaction should lead participants in the low distance condition to project the close other's identity onto the anticipated interaction partner, decreasing perceived social distance. Next, while still anticipating the interaction, participants then rated their preference between Kia and Lexus. We found a significant social distance x power x materialism interaction ( $t(101) = 2.31, p = .02$ ). Among high materialists, there was a significant social distance x power interaction ( $t(101) = 2.96, p = .004$ ), replicating our previous experiments. Next, among non-materialists, there was a non-significant social distance x power interaction ( $t(101) = -.15, p = .88$ ).

In sum, we find that the relationship between power and status preference depends on consumers' social distance from others. Specifically, we show that consumers self-verify with close others by choosing products whose status accurately reflects their power. However, with distant others, consumers engage in compensatory self-enhancement of their power (e.g. the powerless prefer status more than the powerful).

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## ***Symposium: Imagine all the Products (and People): New Insights into the Processes and Consequences of Consumer Imagination***

**Room:** Promenade Room

**Chair:** Yael Zemack-Rugar, University of Central Florida, USA

### ***Wouldn't It Be Nice? The Impact of Imagined Consumption on Preference for Complementary Products***

Yael Zemack-Rugar, University of Central Florida, USA\*

Rosellina Ferraro, University of Maryland, USA

Rebecca Rabino, Virginia Tech, USA

Most existing research on imagined consumption has focused on the impact of imagined consumption on the imagined product itself, showing a significant increase in the preference and choice of the imagined product (Hung & Wyer, 2011; Peck & Shu, 2009). Instead, we examine the impact of imagined consumption on complementary products.

By definition, products and their complements are commonly purchased and used together (Walters, 1988). This likely creates a neural association between them (Anderson, 1983; Collins & Loftus, 1975), increasing the likelihood that whenever a given product is imagined, complements will also be brought to mind, increasing preference for those complements (Berger & Fitzsimons, 2008). Therefore, we propose that imagined consumption of a given product should lead to an increase in preference for its complements. Importantly, we propose that the strength of this effect depends on two variables – imagined action (usage vs. purchase) and product type (utilitarian vs. hedonic), which we propose affect the nature of the imagining episode.

Imagined usage, which focuses on specific functions of a product, is predicted to lead to exemplar-based processing, resulting in narrow categories and a focus on dissimilarities. Imagined purchase, which focuses on the reasons, experience, and outcomes of

purchase, is predicted to have a gestalt nature, resulting in broader processing. We argue that broader processing is likely to lead to more widespread neural activation, resulting in greater activation of the complement. Thus, while both imagined usage and imagined purchase are expected to increase preference relative to no imagining, imagined purchase is expected to increase preference more so than imagined usage.

Furthermore, imagined usage is expected to be more restricted for utilitarian products, which have more defined uses and are purchased with a specific purpose in mind, as compared to hedonic products, which are not purchased for a specific purpose, but rather for pleasure and fun (Dhar & Wertenbroch, 2000). Thus, imagined usage of a utilitarian (hedonic) product should be more (less) restricted, leading to a lesser (greater) impact on preference for complements. The impact of product type, however, should not emerge for imagined purchase, due to its broad-based, more gestalt nature. Thus, an interaction of imagined action by product type is predicted.

Study 1 tested the predicted interaction using a 3 (imagined action: use/purchase/control) X 2 (product type: hedonic/utilitarian) between-subjects design. After imagining purchasing/using colored pencils in a hedonic/utilitarian context, participants indicated their preference between two free gifts: pencil sharpeners or manila folders. As predicted, all imagining conditions led to greater preference for the complementary sharpeners compared to the no-imagining control, and imagined purchase led to greater preference than imagined usage. Furthermore, imagined purchase and imagined usage led to equally high preference for the sharpener in the hedonic condition, while imagined purchase led to greater preference than imagined usage in the utilitarian condition.

Study 2 demonstrated the robustness of the effect by varying the number of imagining episodes between 0 (no imagining control) and 24 (5 conditions: 1, 4, 8, 12, 24), focusing only on the utilitarian condition. As in study 1, both imagining types increased preference for the complementary product relative to the no-imagining control, but preference was higher for imagined purchase than for imagined usage. Moreover, the number of repetitions did not differentially impact preference for the complement. This study rules out an alternative prediction based on satiation (Morewedge, Huh, & Vosgerau, 2010).

In study 3, we began to test the proposed process by comparing the effects of imagining type and product type on preference for the imagined product versus the complementary product. The proposed differences in the neural activation from the product to the complement should be irrelevant to the imagined product itself, as imagining the product makes it active, regardless of imagined action or product type. Thus, imagined usage and imagined purchase should increase preference for the imagined product (consistent with prior literature; e.g., Hung & Wyer 2011; Peck & Shu 2009), regardless of product type, and the interaction effect of imagined action by product type should be unique to the complement. A 3 (imagined action: usage/purchase/control) X 2 (product type: hedonic/utilitarian) X 2 (choice: imagined or unrelated product/complementary or unrelated product) between-subjects design was conducted to explore this process. As expected, participants preferred the imagined product (a drinking glass) over an unrelated product (bathroom hooks) equally, regardless of product or imagining type, and preferred the imagined product more than those in the no-imagining control. Moreover, the predicted interaction of imagined action by product type on preference for the complement (a pitcher) was replicated.

In study 4, we continued to test the underlying process using a 2 (purchase/usage) X 2 (load/no load) between-subjects design, focusing only on the hedonic product. Imposing load should impact exemplar-based processing, but not gestalt processing (Bose, Folse, & Burton, 2013; Hutchinson & Alba, 1999; Moskowitz & Skurnik, 1999; Sherman et al., 1998). Replicating study 1, preference for the complement did not differ by imagined action under no load; however, as predicted, preference for the complement was lower in imagined usage (exemplar-based) than in imagined purchase (gestalt based) under load.

In study 5, we made the imagined product irrelevant via explicit rejection; such rejection should serve to “turn off” the neural activation process, thus attenuating preference for the complement. We also collect thought protocols. In a 2 (imagined action: use/purchase) X 2 (purchase rejection: yes/no) between-subjects study, participants imagined using/purchasing a printer (a utilitarian product) and wrote down their thoughts during the imagining episode. Next, half the participants imagined that they ran out of time while looking at the printer and headed to the checkout (without it). The other half imagined that while looking at the printer they decided it was too expensive, and opted not to buy it. As expected, prior results replicated when the printer was not rejected, but preference for the complement dropped in both imagined action conditions when the printer was rejected. The thought protocols provide evidence that imagined usage leads to more exemplar-based imagining than imagined purchase, and vice versa for imagined purchase and gestalt-based imagining.

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### ***Imagining versus Experiencing Interpersonal Touch: Discrepancies in Perceptions of Touch***

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Previous research has demonstrated that imagining sensory experiences can be incredibly influential in consumption (Krishna, Morrin, & Sayin, 2014; MacInnis & Price, 1987). For example, Peck, Barger, and Webb (2013) demonstrate that the effect of haptic imaging – the mental visualization of touch – produces similar effects to actual touch. These researchers found that imagining touching an object results in similar effects on perceived ownership as actually touching the object. Even with this finding, research on imagery and the tactile system is quite limited (Klatzky, Lederman, & Matula, 1993), and most of it focuses on imagining touching objects rather than imagining touching people (Katz, 1925). The latter, how imagining interpersonal touch differs from the actual experience of initiating or receiving that touch, is the focus of the present inquiry.

Specifically, we explore an individual's comfort with interpersonal touch, which we define as the degree to which an individual is comfortable with intentional interpersonal touch from or to another person. We consider two factors – initiating touch, which is the act of touching someone else, and receiving touch, which is the act of being touched by someone else. In our research, touch is operationalized as a light touch on the upper arm. Interpersonal touch of this nature has been widely accepted to produce positive responses for touched individuals (e.g. Crusco & Wetzel, 1984; Fisher, Rytting, & Heslin, 1976; Hornik, 1992). However, we believe that the impact of such touch may vary, depending on whether individuals imagine touch as producing positive or negative consequences. Moreover, we explore the effects of imagining touch on both oneself and on the other person.

In a lab study, we investigate the impact of imagining initiating touch compared with its actual effects. Do people who imagine touch as being highly uncomfortable actually experience discomfort when asked to touch a stranger? Furthermore, do the strangers who they touch perceive the interaction to be more or less comfortable? We conducted a 2 (buyer/seller) x 2 (no touch/touch) between subjects design attempting to answer these questions. Sellers were asked to either touch or not touch a buyer during a sales simulation in which a buyer was examining a t-shirt. Participants were asked to fill out an individual difference measure of comfort with interpersonal touch, which we use as an indicator of how an individual imagines the occurrence of touch. The comfort with touch measure includes items such as, "I don't mind if someone touches my arm."

Our results show that sellers who imagined initiating touch as being uncomfortable are, in fact, significantly less comfortable when they have touched a buyer than when they have not. In contrast, sellers who imagine initiating touch as being comfortable were more comfortable when they have touched a buyer than when they have not. Thus, individuals are accurate in their imagery and actual touch effects for themselves.

However, buyers are unaffected by the level of comfort of touching of the seller. That is, buyers' comfort level did not differ, regardless of whether the seller was comfortable or not comfortable initiating touch. Taken together, these results suggest that a seller who initiates touch may imagine (and actually feel) uncomfortable during the interaction; however, the buyer on the receiving end of the touch does not sense the seller's discomfort, and is equally comfortable with the interaction regardless of the seller's disposition.

Whereas the first study highlighted perceptions of initiating touch, the second study investigates receiving touch. We conducted this study in a sporting goods store in Karlstad, Sweden. Native Swedish confederates posed as store employees and interacted with customers in touch and no touch conditions. Our results reveal a difference between individuals who imagine touch positively or negatively. Specifically, individuals who imagine high comfort with receiving touch evaluated the store more positively ( $t(347) = 3.31, p = .001$ ) however, for those who imagine high discomfort with receiving touch, the actual touch did not have a negative effect on their larger attitudes ( $t(347) = -.56, p = .58$ ). Therefore, receiving touch, in fact, positively impacts people who scored higher on their comfort with receiving touch, whereas customers who imagine being uncomfortable are not actually affected significantly by its occurrence.

Future research in this area ought to clarify the mental processes occurring to produce differing touch imagery. Managerially, interpersonal touch is a tool that can be abandoned or leveraged based on the appropriateness of the context. If managers encourage employees to reach out and touch customers, some employees may imagine the interaction to be uncomfortable, but our research demonstrates that the effects of touch on customers are not as negative as one might imagine.

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***On the Other Hand...: Motor Fluency Effects Elicited by Unrelated Haptic Objects in Print Ads***

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Fluency, or the ease with which objects are mentally processed, has been demonstrated primarily in terms of conceptual (Lee & Labroo, 2004; Whittlesea, 1993) and perceptual (Hyejeung & Schwarz, 2010; Shapiro & Nielsen, 2013; Whittlesea et al., 1990) fluency. A less investigated topic, motor fluency, refers to the motor-driven process by which one mentally evaluates whether an object is easy to act upon (Yang, Gallo, & Beilock, 2009).

In anticipation of interacting with objects in the environment, individuals mentally simulate motor behavior without conscious awareness. Our visual system extracts information about objects in the environment and constructs mental representations that guide our subsequent action with the objects (Derbyshire, Ellis & Tucker, 2006). Motor-based mental simulation activates many of the same areas of the brain as actual physical interaction does (Demougeot & Papaxanthis, 2011). Such mentally simulated actions are useful in that they prepare the body to interact with objects in the environment.

Motor fluency can thus be understood as the brain automatically *imagining* the body physically interacting with an observed object. Objects that are easily graspable are particularly likely to be automatically imagined as being utilized by the hands. Tools with handles are more likely to trigger this process. The motor fluency process renders the seen object as easier to interact with, which creates positive affect that is evident in more positive object evaluation. Elder and Krishna (2012) showed that consumers prefer advertised products (such as a bowl of yogurt) more when another object that is easily graspable and related to consumption of the product (e.g., a spoon) appears in the ad.

The current research extends our understanding of the motor fluency process by examining the effect of easily graspable objects *completely unrelated* to the advertised (i.e., target) object. We report four studies that explore conditions under which an advertised product benefits from the presence of another, *completely unrelated object*, in the same ad or in an ad immediately preceding the target product ad. Thus, unlike prior research, the focus here is on the effect of *unrelated* collateral haptic objects -- such as a coffee mug in an ad for a wall clock, and on whether the target object is haptic in nature. Four studies with right-handers were conducted.

In study 1, participants were randomly assigned to one of three conditions in which they evaluated a wall clock (i.e., a non-haptic target) advertised with a coffee cup on a shelf beneath the clock with its handle pointing right, handle pointing left, or with no cup depicted in the ad (control). As predicted, evaluations were higher when the cup's handle pointed to the right (i.e., eliciting motor fluency toward the mug). This study demonstrates the basic finding that non-haptic advertised products can benefit from motor fluency effects elicited by unrelated haptic objects in the ad, provided they are oriented to elicit dominant-hand grasping behavior.

In study 2, participants are randomly assigned to view four print ads (two filler ads, followed by a fluency cue manipulation in the third ad, and the target product in the fourth ad). The third ad contained a coffee mug from either Starbucks (a familiar brand) or Stoneworks (an unfamiliar brand) with its handle pointing left (disfluent) or right (fluent). The fourth ad contained the (non-haptic) target object, a wall clock. The fourth ad was more persuasive in the motor fluent condition when the fluency cue was associated with an unfamiliar brand name, with the result mediated by positive affect elicited by the fluency cue. This study demonstrates how the positive affect elicited by motor fluency cue is misattributed from the unrelated object in ad #3 to the target object in ad #4.

In study 3, an unrelated haptic object (a coffee mug without a handle) is positioned on the left, on the right, or is not depicted in an ad for a laptop computer (i.e., a *haptic* target). We find that positioning the unrelated haptic object (i.e., coffee mug) in the ad in a fluent manner (on the right) does not elicit positive affect for the target, because the dominant hand becomes "tied up" with the unrelated haptic object and thus cannot be mentally devoted to the target.

In study 4, we reverse the "tied up" dominant hand problem by adding a handle to the unrelated haptic object (i.e., the coffee mug) which suggests usage by the non-dominant hand. In this study, we find that the unrelated object (e.g., mug) positioned to the right of a haptic target object (e.g., laptop computer) no longer "ties up" the dominant hand or interferes with motor fluency effects toward the target -- if its handle points left (suggesting it should be mentally grasped with the left hand). In this way, an ad that visually creates affordances that "free up" the dominant hand for interaction with the target object restores the positive motor fluency effect.

This research extends our understanding of how non-conscious motor fluency effects elicited by unrelated objects in print ads impact consumer evaluations of advertised products that are haptic or non-haptic in nature. A clearer understanding of the effects of unrelated haptic collateral objects on consumer responses to products in advertisements is both theoretically and managerially interesting -- with the potential to help marketers design more effective promotional campaigns.

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# ***Individual Papers: Understanding Brand Relationships and Brand Meaning***

## ***Brand Sacredness and Its Cultural Underpinnings***

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Consumption sometimes goes beyond meeting everyday needs to become a sacred experience, or something that is regarded as more significant, powerful and extraordinary than the self. Self-transcending occurrences in consumption can emerge for places (e.g., shopping malls), products and brands (e.g., Apple), and experiences (e.g., Thanksgiving dinner or sports events) (Belk et al. 1989). Although past research has helped document the sacredness of some consumption experiences and products, brand sacredness hasn't been measured and little is known about its unique consequences. Is brand sacredness different than other consumer-brand measures? What sets brands that are considered sacred apart from other brands? This research tries to answer these questions by investigating the downstream consequences of brands that are collectively considered sacred entities by consumers.

We start by defining brand sacredness as the extent to which brands are perceived as having an extraordinary dimension (transcendence), associated with an endless time and space (boundlessness), and perceived as essential to the foundation of reality (ultimacy) (Belk et al, 1989; Kesebir, Chiu, and Pyszczynski 2011). Although several processes are responsible for the sacralization of products and brands (e.g., rituals, gift giving, or inheritance, Belk et al. 1989), we focus here on sacredness through external sanctioning by experts and reference groups. Given that the most visible signs of a brand, such as the logo, become the collective understanding of a brand, we propose that consumers will be more protective of those visible signs for brands that are collectively ascribed high levels of sacredness.

Given that past research on the sacredness of consumption has been qualitative in nature, and focused more on consumption experiences in general as opposed to brands in particular, we conducted Study 1 with the goal of developing a reliable and valid measure of brand sacredness. In this study, a first sample of 59 participants rated one of three brands (Nike, Apple, or New Balance) on a 7-item sacredness scale with two items related to transcendence, two to boundlessness, two to ultimacy and one item directly related to sacredness. An EFA showed that all items loaded on a single factor, and the scale also offered a high level of internal consistency ( $\alpha=.89$ ). Attesting to the predictive validity of the scale, and supporting the sacralization of iconic brands, results showed that the two American iconic brands were rated higher in sacredness than the less iconic one. A second sample (N=67) rated 12 brands on sacredness (same 7-items scale) as well as on involvement, self-brand connection, and cultural symbolism. A CFA with the four constructs as separate, yet correlated, factors offered a good fit to the data (CFI=.93, SRMR=.07), and better than a model with a single factor ( $\Delta\chi^2=1,157, p<.0001$ ). This suggested that brand sacredness is a distinct construct that is partially correlated with the other three brand measures.

Study 2 was designed to explore the relationship between ascribed brand sacredness and downstream consequences, especially as they relate to the brand's visible signs. To do so, 263 college students rated one brand (Sprite) in terms of sacredness (same 7-item sacredness scale in study 1), involvement, self-brand connection, and cultural symbolism. They were then asked to evaluate how happy they would be with different changes to visible signs of the brand (i.e., the lower the rating, the more protective they are of that aspect of the brand). A regression on reactions to changing the logo on brand sacredness and the other three brand measures as predictors shows only a significant coefficient for brand sacredness ( $p<.001$ ). Thus, controlling for the other brand constructs, only brand sacredness predicts consumers' protectiveness of a brand's logo.

To further explore the unique downstream consequences of brands considered sacred by consumers, in study 3 we manipulated sacredness by looking at two similar brands, but with different levels of brand sacredness. In a pre-test we identified Nike (high sacredness) and New Balance (lower sacredness) as the target brands that are similarly well-liked (both with brand attitude means  $\geq 5$  on a 7-item scale,  $p > .05$ ) and with similar levels of self-brand connection ( $p > .05$ ). 139 participants were asked to list what aspect(s) of the brand they “would NEVER consider should be changed.” After that, they indicated their reactions to changes to the brand’s visible signs. Responses were coded into three categories of changes: functional, symbols, and products. As predicted, simple contrasts revealed that participants were less inclined to suggest changes to the symbols of the high-sacredness brand ( $p < .001$ ). In addition, looking at the ratings of potential changes to the brands’ logos, a simple contrast shows less willingness to change the logo for Nike than for New Balance ( $p < .001$ ). These results confirm the findings from study 2.

We are currently exploring other unique consequences of brand sacredness, such as increased willingness-to-pay and protection against negative publicity, with one preliminary study supporting these hypotheses.

This research aims to contribute to prior literature by empirically investigating brand sacredness and uncovering some of its unique downstream consequences. Our findings demonstrate that brand sacredness is a separate (yet related to other brand measures) construct that has unique downstream consequences, namely consumers being more protective of brand symbols of brands that are collectively considered sacred.

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### ***Brand (In)fidelity: When Flirting with the Competition Strengthens Brand Relationships***

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In the same way that you would not want your romantic partner flirting with someone else, a brand does not want its loyal customers trying and admiring other products. However, flirting with other brands can strengthen a consumer’s preference for their favored brand. In fact, admiring and sampling new products and services can be exciting, and when the favored brand remains in the heart and mind of the consumer, this excitement can paradoxically spill over onto the favored brand.

Using interpersonal relationships as a metaphor (Aggarwal 2004; Fournier 1998), we define “brand flirting” as casual interest in or short-term experimentation with a brand. Flirting in the consumer domain is common: for example, while window shopping, a consumer may admire other brands or, once inside the store, even sampling them, with no real intention of switching brands. Our central prediction is that flirting with a competing brand can cause individuals who are in committed brand relationships to *increase* their preference for their favored brand. We propose that the arousal induced by flirting with competing brands can be transferred to the preferred brand, increasing committed consumers’ anticipated consumption of and love for “their” brand. In fact, affective responses “disperse, scatter, permeate, combine, fuse, spillover and become attached to totally unrelated stimuli” (Murphy, Monahan, and Zajonc 1995, p. 590; Sweldens, Osselaer and Janiszewski 2010).

Because a favored brand is more salient as commitment increases (Agrawal and Maheswaran 2005; Park et al. 2010), we predict that the spill-over of flirting-induced arousal onto the favored brand will be more likely among committed consumers, as compared to less

committed consumers. Moreover, because cues that are related to or similar to a brand are closely linked to that brand in consumers' minds (Berger and Fitzsimons 2008; Lee and Labroo 2004; Nedungadi 1990), the spill-over of flirting-induced arousal from onto a favored brand will be more likely when the competing brand is similar (vs. dissimilar) to the favored brand. We test the positive effect of brand flirting in a series of studies using a diverse array of paradigms.

In study 1, we show that appreciating a competitive brand's favorable characteristics induces loyal participants to consume greater amounts of their favorite brand in the near future. We presented participants with four favorable features of a soft drink and asked them to evaluate each of them. As predicted, participants committed to Coca-Cola (Pepsi) who rated favorable features of Pepsi (Coca-Cola) intended to consume more of their favorite soft drink in the upcoming week, compared to committed participants who rated the same favorable features of Coca-Cola (Pepsi).

In study 2, we provide initial evidence in support of proposed underlying mechanism by examining if the effect of flirting depends on the similarity between one's favorite brand and a competing brand. The reason for this prediction is that flirting with a similar brand should facilitate the spill-over of flirting-induced arousal from the similar brand to the favorite brand. Participants listed their favorite beer as well as other five beers, and then ranked these five other beers from the most similar to the most dissimilar to their favorite beer. Subsequently, they were asked to imagine that their favorite beer, a beer that was similar or dissimilar to their favorite beer, or red wine (control) was chosen by experts as the best beverage to complement a plate of smoked meats in a food tasting event. Analysis revealed that committed consumers who read a positive scenario about a similar beer expressed even greater love for their favorite beer compared to their counterparts who read the same scenario involving their favorite beer, a dissimilar beer, or wine.

In study 3a and 3b, we test our full model. In study 3a, we asked participants whether it was more exciting to consume a favored brand or to try out (i.e. flirt with) a different attractive brand—the majority of participants indicated that it was more exciting to try out a different attractive brand. In study 3b, we show that the flirting-induced excitement mediates the effect of flirting on the desire to consume one's favorite brand. In this study, participants imagined to consume their favorite potato chips, or a similar brand of potato chips. Next, participants indicated how exciting it would be to eat those chips, and how many bags of their favored potato chips they intended to consume in the near future. Consistent with the proposed process, mediational analysis indicated that flirting with a similar brand elicits excitement, and this excitement, in turn, leads to higher desire to consume a favorite brand in committed consumers.

In study 4, we rule out an alternative explanation for the brand flirting effect—that exposure to a competitor's brand represents a temptation that causes committed consumers to behave in accordance with the goal of being loyal to their favored brand. If the brand flirting effect occurs because a competing brand is a temptation that automatically activates the goal of loyalty to a favored brand, then mere exposure to a competing brand should increase anticipated consumption of the favored brand (Fishbach et al. 2003). However, in study 4, we demonstrate that mere exposure to a similar competing brand is not sufficient to increase the anticipated consumption of a favored brand (as suggested by a goal activation account) but only actively flirting with a competing brand affects the anticipated consumption of a favored brand positively (as suggested by our account).

In short, this research offers important new insight into the consequences of flirting with a non-favored brand on consumers' subsequent attitudes and behavior. Taken together, our findings suggest that being unfaithful does not damage committed brand relationships - on the contrary, it can even strengthen the bond between committed consumers and their favorite brands. We conclude by explaining how our current studies rule out other alternative explanations (spreading of alternatives, Brehm 1956, Festinger 1957; fluency, Berger and Fitzsimons 2008) and by discussing the implications of this research for competition dynamics and customer retention.

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## ***The Asymmetrical Logo Effect: The Interplay of Brand Personality and Logo Aesthetics on Brand Equity***

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Research on the visual properties (e.g., complexity, prototypicality) of stimuli such as brand logos or packaging has demonstrated that (1) a stimulus' properties influence visual processing fluency (Janiszewski & Meyvis, 2001), and (2) when the visual processing of a stimulus is fluent, individuals' responses are more favorable (Winkielman et al., 2003). Symmetry (asymmetry) in particular has been shown to facilitate (hinder) fluent processing (Reber, Schwarz, & Winkielman, 2004). In consumer research, symmetrical (asymmetrical) brand logos have been shown to be evaluated more (less) favorably (Henderson & Cote, 1998).

Thus, prior research indicates that it is beneficial (harmful) for brands to use symmetrical (asymmetrical) logos as they are more (less) fluently processed and hence pleasing to consumers. However, visual processing research has not examined other—potentially more complex—effects of logos' visual properties. For instance, it is unknown whether the meanings conveyed by logos' visual properties may interact with brand personalities (Aaker, 1997) to affect brand equity. It is also unknown whether the well-established (Reber et al., 2004) positive (negative) effects of visual symmetry (asymmetry) can hold, or be reserved, when the meanings conveyed by symmetrical (asymmetrical) logos are taken into consideration. This research seeks to fill these gaps.

We propose that because asymmetry is more arousing and hence exciting (Krupinski & Locher, 1988), the exposures to asymmetrical shapes and the accompanying experience of excitement create associations between excitement and asymmetry in long-term memory. As such, asymmetrical logos are imbued with the notion of excitement. We further propose that the meanings conveyed by logos can reinforce or undermine brand personality; and thus that the combination of an asymmetrical (symmetrical) logo with an exciting brand personality will heighten (lessen) brand evaluations (i.e., customer-based equity). In turn, heightened (lessened) customer-based equity will result in heightened (lessened) company-based and financial-based equity. Four studies support our propositions.

*Can asymmetry convey excitement?* In study one, 306 participants were randomly shown four asymmetrical and four symmetrical logos. After each logo, participants were asked to select from a list of fifteen personality traits (three per personality dimension; Aaker, 1997), the three that would best characterize the logo. In order to measure the extent to which asymmetry versus symmetry is associated with excitement, we computed the average number of exciting traits selected when the logos were asymmetrical versus symmetrical. Participants selected more exciting traits when the logos were asymmetrical ( $M_{\text{asymmetrical}}=.83$  vs.  $M_{\text{symmetrical}}=.71$ ;  $t(305)=28.62, p<.001$ )

*Can logo shape and brand personality interact?* In study two, 210 female participants were shown the logo and tagline of a brand of women's apparel. Logo shape was manipulated by presenting either a symmetrical or asymmetrical version of a logo. Brand personality was manipulated by presenting either an exciting or sophisticated tagline. Finally, we measured brand attitude on 7-point scales. Analyses revealed a significant logo shape×brand personality interaction ( $F(1,206)=4.94; p=.027$ ). Precisely, brand attitude was significantly higher when the exciting brand had an asymmetrical (vs. symmetrical) logo ( $M_{\text{asymmetrical}}=4.53$  vs.  $M_{\text{symmetrical}}=3.74; p<.001$ ). This difference was not significant for the sophisticated brand ( $p>.68$ ).

*Is the asymmetrical logo effect caused by participants' propensity to associate asymmetry with excitement?* In study three, 130 participants were shown the description and logo of a juice manufacturer. Logo shape was manipulated by presenting either a

symmetrical or asymmetrical version of a logo. Brand personality was manipulated by describing the manufacturer using personality traits related to either excitement or sincerity (Aaker, 1997). Finally, we measured brand attitude. Then, in a seemingly unrelated study, we asked participants to select from ten personality traits (five per brand personality manipulated), the five that would best characterize each of four asymmetrical and four symmetrical logos. In order to measure participants' propensity to associate asymmetry with excitement (hereafter: A-E-score), we subtracted the average number of exciting traits selected when the logos were symmetrical from the average number of exciting traits selected when the logos were asymmetrical. Analyses revealed a significant logo shape×brand personality×A-E-score interaction ( $B=1.070;t(122)=1.850;p=.067$ ). Precisely, participants who associated asymmetrical logos with excitement had more favorable attitudes when the exciting brand had an asymmetrical logo. However, participants who associated symmetrical logos with excitement had more favorable attitudes when the exciting brand had a symmetrical logo.

*Does the asymmetrical logo effect hold in the marketplace?* In study four, we merged three field datasets pertaining to 2011. The first, obtained from Interbrand, includes the net present economic value in dollars (hereafter: NPEV) of the 100 brands listed on the Interbrand's Best Global Brands ranking. This measure is derived from both company-based and financial-based equity metrics (Ailawadi, Lehmann, & Neslin, 2003). The second, obtained from Young & Rubicam, consists of brand personality evaluations for the same 100 brands from approximately 15,000 US customers. It contains also a measure of customer-based equity called brand asset value (hereafter: BAV) and numerous customer-level control variables (e.g., purchase intentions). The third consists of a panel of US customers ( $n=202$ ) who evaluated the symmetry of the logos of these 100 brands. Firstly, a moderation analysis showed a positive asymmetry×excitement interaction on NPEV ( $B=1.79;t(87)=2.401;p=.018$ ). Secondly, this effect was partially mediated by customer-based equity (i.e., BAV). Specifically, while the asymmetry×excitement interaction directly led to higher NPEV ( $B=.140;t(86)=1.891;p=.062$ ), it also led to higher BAV ( $B=.150;t(87)=2.069;p=.041$ ), which in turn led to higher NPEV ( $B=.255;t(86)=4.752;p<.001$ ). Thirdly, similar moderated-mediation analyses ruled out the possibility that an asymmetrical logo would boost the equity of brands with any other brand personality. Lastly, suggesting that the asymmetrical logo effect is not taken into account by those involved in logo design, additional analyses indicated that logo asymmetry was not predicted by brand excitement ( $B=-.108;t(95)=-1.075;p=.285$ ).

Our findings have important theoretical and practical implications. They show that visual asymmetry is associated with excitement in memory. Highlighting an important boundary condition to the well-documented positive (negative) effects of symmetry (asymmetry), they also show that the combination of a symmetrical (asymmetrical) logo with an exciting brand personality harms (boosts) customer-based, company-based, and financial-based equity. Additionally, we demonstrate that commercial art designers are not taking into account this potentially detrimental effect of symmetrical logos, and that the asymmetrical logo effect is specific to exciting brand personalities.

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### ***Brand Authenticity: An Integrative Framework and Measurement Scale***

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Brands play an important role in consumers' identity projects (Edson Escalas, 2004; Kirmani, 2009), insofar as consumers rely on brands to express themselves, self-enhance, or self-verify (Aaker, 1999). At the same time, consumers are confronted with an overflow of the fake and an omnipresence of meaningless market offers (Boyle, 2004). To overcome this meaninglessness, consumers look for

brands that are relevant, original, and genuine: they increasingly search for authenticity in brands (Arnould & Price, 2000; Beverland, 2005; Brown, Kozinets, & Sherry, 2003). Although there have been various efforts to conceptualize and operationalize brand authenticity (e.g., Napoli, Dickinson, Beverland, & Farrelly, 2014), they have left questions regarding measurement, drivers, consequences, as well as underlying processes and boundary conditions unanswered. Consequently, their contribution to an understanding of the importance of authenticity for brands and consumers is limited.

Against this background, this research seeks to shed light on the nature of perceived brand authenticity (hereafter referred to as PBA), its measurement, and its role in a theoretical framework. To achieve these objectives, we report (1) a synthesis of existing interdisciplinary research on authenticity to provide a definition and integrative framework of PBA, (2) four studies that pertain to the development of a measurement scale to assess PBA, and (3) two studies that empirically examine drivers, consequences, boundary conditions, and a process through which PBA transmits its effects on some consumers.

We first review the literature on authenticity across disciplines and propose that three perspectives (i.e., objectivist, constructivist, and existentialist; Golomb, 1995; Trilling, 1972; Wang, 1999) encompass all current authenticity conceptualizations. Drawing on these three perspectives, consumers' assessment of authenticity involves a complex perceptual process that is carried out by a particular evaluator in a subjective context (Grayson & Martinec, 2004). The literature further suggests that the objectivist, constructivist, and existentialist perspectives on authenticity are intertwined, and that each provides input to the conferring of authenticity to objects (Leigh, Peters, & Shelton, 2006). We therefore propose that PBA arises from the interplay of objective facts (indexical authenticity), subjective mental pictures (iconic authenticity), and existential motives connected to a brand (existential authenticity). Based on these authenticity perspectives combined with exploratory in-depth interviews, we conceptualize PBA along four dimensions (continuity, credibility, integrity, and symbolism) and define PBA as the extent to which a consumer perceives a brand to be faithful towards itself (continuity), true to its consumers (credibility), motivated by caring and responsibility (integrity), and able to support consumers in being true to themselves (symbolism).

The second objective of this research pertains to the operationalization and validation of the dimensions of PBA across different brands, product categories, and groups of consumers. Several studies address these objectives: Study 1 focuses on item generation and content validity. Studies 2a and 2b test and refine the scale using different brands and samples of consumers. Based on confirmatory factor analyses with AMOS (20), the scale results in a 15-item, four-factor correlated model (continuity, credibility, integrity, symbolism) with satisfactory psychometric properties. Study 3 examines known-group validity, and Study 4 focuses on discriminant validity between the PBA construct and its dimensions with regard to related constructs. The final 15-item PBA scale is reliable across different brands and cultural contexts (North America and Europe) and—with few exceptions—shows discriminant validity with regard to related constructs.

The third objective of this research is to examine PBA's role in a nomological network that involves antecedents and outcomes, as well as moderators and a central process underlying PBA's effects on consumers' responses to the brand. The findings of a large-scale survey study among 932 consumers (Study 5) show that consumers tend to rely on a communication style based on a brand's virtue and roots (iconic), the absence of brand scandals and brand-congruent employee behavior (indexical), and brand anthropomorphism (existential) when forming brand authenticity impressions. Some of these antecedent effects are moderated by consumers' skepticism towards advertising. Concerning PBA's outcomes, our findings show that PBA increases emotional brand attachment and word-of-mouth.

In order to provide additional evidence for PBA's ability to predict consumer behavior, and to examine an underlying mechanism of its effects, we report a lab experiment (Study 6) based on fictitious brands. The experiment consisted of a blind product test of a skincare brand. The manipulation involved 204 participants reading a product description purportedly written by an independent

journalist. In the description, which included the brand's background, the brand was either presented as highly authentic or less authentic. We manipulated brand authenticity by varying information along the four PBA dimensions. The results show that consumers' self-authenticity interacts with a brand's perceived authenticity such that consumers who pursue authenticity in their own lives perceive authentic brands as more self-congruent, which in turn influences their brand choice likelihood. In other words, we found that PBA led to higher self-congruence and consequently higher brand choice likelihood for consumers high in self-authenticity. Consumers who are low in self-authenticity do not seem to try to self-enhance via greater consumption of authentic brands. This finding hints at a self-verification rather than a self-enhancement process. Future research might want to examine other boundary conditions of the effects of PBA on brand outcomes, such as need for authenticity in consumption—especially in combination with cultural socialization.

Overall, this research sheds light on PBA's (1) measurement, (2) drivers, (3) consequences, as well as (4) an underlying process of its effects and (5) boundary conditions. The findings of this research provide novel insights regarding brand authenticity's nature and highlight its importance for branding theory and practice. It further opens avenues for future research, such as the role of authentic brands for subjective well-being (Diener, Oishi, & Lucas, 2009) or brand relationship quality (Fournier, 1998).

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## ***Individual Papers: The Study of Bling: Antecedents and Consequences of Luxury Consumption***

### ***Fertility and Women's Luxury Spending***

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Billions of dollars are spent each year on lavish goods such as handbags and jewelry, with women accounting for more than half (55%) of this luxury spending (D'Arpizio 2011; Mintel Report 2011). What factors influence women's desire for luxury goods? Drawing on research showing that fertility influences women's competitive motives (Durante, Griskevicius, Cantú, and Simpson, 2014), we examined whether women's desire for luxury products may be linked to fluctuations in the hormones that regulate fertility.

As an initial investigation into our research question, we conducted a correlational study using real-world data. We predicted that, controlling for fluctuations in the economic climate, increases in the proportion of fertile women in the population (women aged 18-35) would be positively related to luxury consumption, leading to growth of luxury brands compared to non-luxury brands. We first calculated operational fertility (proportion of fertile, adult women in the US population) from 2000 to 2013. We obtained measures of brand equity from Interbrand for the top 10 Luxury (e.g., Louis Vuitton, Gucci) and top 10 non-luxury brands (e.g., IBM, Coca Cola) from 2000 to 2013. Because the economic climate has a large impact on brand values, we calculated the pure brand values as the ratio of the original brand values relative to the annual Dow Jones average. There was a positive correlation between luxury brand values and the number of fertile women in the population ( $p < .05$ ). As the number of fertile women increased so too did luxury brand values. In contrast, there was no relation between non-luxury brand values and the number of fertile women in the population ( $p > .15$ ). This specific pattern of findings provides initial support for the prediction that fertility influences women's luxury spending.

Study 2 examined whether ovulation amplifies women's desire to achieve status relative to other women. Here we focus on examining whether women's materialism might be amplified at high fertility. While materialism is comprised of three dimensions: success, centrality, and happiness (Richins and Dawson 1992), the competitive tendency amplified by ovulation should be most strongly linked to women's materialism on the *success* dimension, which reflects a desire to own possessions as a measure of one's own status relative to others. Women reported higher scores on the success materialism dimension at high fertility compared to low fertility ( $p < .035$ ), whereas there was no effect of fertility on either centrality materialism or on happiness materialism ( $ps > .76$ ). Moreover, women's success materialism tracked a continuous measure of conception probability across the cycle. As conception probability within the cycle increased, so too did success materialism scores ( $p < .036$ ). There was no relation between conception probability and centrality materialism or happiness materialism ( $ps > .26$ ).

Study 3 attempted to test whether women's desire for status arises automatically during at high fertility, without deliberate thinking. Strong motivations to achieve a goal or acquire an object increase the speed of approach toward the relevant stimulus (Chartrand and Bargh 1999). We examined how fertility influenced women's automatic pursuit of status by measuring the speed with which women approached luxury (or non-luxury) brands. Women approached luxury brands (Prada, Gucci, and Rolex) more quickly at high fertility compared to a lower fertility point in the cycle ( $p < .016$ ). There was no effect of fertility on non-luxury brands (Gap, Old Navy, and Timex;  $p > .10$ ). Again, there was a significant correlation between a continuous measure of conception probability and women's attraction to luxury (vs. non-luxury) brands ( $p < .021$ ). These results lend additional support for the prediction that women have a stronger desire for status consumption near ovulation.

Study 4 sought to test an important boundary condition for how fertility influences women's luxury consumption with a direct behavioral measure in a within-subjects study using hormone tests to detect ovulation. According to the ovulatory competition hypothesis, the fertile phase of the cycle should have different effects on a woman's choices depending on whether those choices improve a woman's standing relative to other women. Hence, ovulation should boost women's desires for more superior products than other women. However, how ovulation influences women's desire for luxury products may depend on a woman's relative wealth, because an individual's financial status influences the type of luxury products people prefer (Han, Nunes, and Xavier 2010)—relatively poor people tend to infer that larger luxury brand logos are more expensive, and even prefer larger (vs. smaller) luxury brand logos. The reverse is true for relatively wealthy people, who perceive smaller logos as more expensive and prefer smaller rather than larger luxury brand logos on products. Thus, we predicted that—near ovulation—relatively poor (wealthy) women should desire larger (smaller) logos for themselves and smaller (larger) logos for other women. To measure desire for conspicuous luxury products, we had women draw logos on products (after Wang and Griskevicius 2014), once when they were at a high fertility point in the cycle and again at low fertility. At both test sessions, women were instructed to draw several luxury brand logos on products for themselves and for other women. We calculated the size of the luxury brand logo and measured participants' financial status. There was a three-way interaction among fertility, target user, and financial status ( $p < .01$ ). At -1 SD for financial status, ovulating women drew significantly larger logos for themselves compared to the logos drawn for other women ( $p < .05$ ). At +1 SD for financial status, ovulating women drew smaller logos for themselves and larger logos for other women ( $p < .05$ ).

Our findings suggest that fertility may motivate women to seek out and purchase luxury goods. If the ovulatory cycle systematically alters women's desire for luxury products, this has important implications for marketers, researchers, and consumers. Female consumers might choose more opulent goods depending on when during the month they are shopping. Researchers might explore how manipulated cues to competition affect women's conspicuous consumption. And, marketers may provoke different responses from the same message at different times of the month.

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## ***The Devil Wears Prada: How Luxury Consumption Influences Social Behavior***

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Luxury consumption is skyrocketing and mounting to as much as \$525 billion per year in the United States alone (Bev and Zolenski 2011). When millions of people are using luxury products every day, what are the consequences of such consumption?

Surprisingly, with sufficient research in the luxury area, we still know very little to answer the questions raised above. Past research has examined people's attitudes, preferences, and motivations for acquiring luxury goods (Berger and Ward 2010; Han, Nunes, and Dreze 2010; Rucker, Galinsky, and Dubois 2012; Wang and Griskevicius 2014), leaving a blank for what happens to people when they actually use them. We investigate how luxury consumption influences psychology and behavior. We propose that the experience of using a luxury product boosts people's perceptions of social status and therefore it triggers self-interested behavior such as take more resources for the self and become more willing to cut in line. In addition, we identify a theoretically-derived condition that reverses the negative effects of luxury consumption: it can lead people to behave in a self-interested manner by giving more to others, but only under specific conditions. Four experiments test these hypotheses.

In study 1, female participants (N=72) first walked around a busy area wearing either a luxury (Prada, retail price \$1890) or a non-luxury handbag (retail price \$75) for about 15 minutes. Afterwards, they were presented with an opportunity to behave in a self-interested manner. The first measure was based on the notion of selfishly taking the last desirable item from a group's common resources. The result indicated that people who wore the Prada handbag were far more likely to take the last desirable pen from communal pen box compared to the control condition (61.8% vs. 30.3%;  $\chi^2(1) = 6.67, p = .01$ ). The second measure involved willingness to share resources with another person. We found that participants in the luxury condition gave significantly more money to themselves than control condition ( $M = \$7.44$  vs.  $\$6.69; p = .02$ ).

Study 2 sought to conceptually replicate and extend the findings from study 1, and tested the psychological mechanism. Women (N=42) once again walked around campus with either a luxury or a non-luxury handbag. To assess whether wearing the handbag influenced people's perceptions of social status, participants filled out a short survey during their consumption experience. Embedded in this survey were items that measured participants' perceptions of their current level of social status. Finally, we examined women's self-interested behaviors across different situations such as cut in line in a coffee shop and speed ahead to get a parking space while another car is waiting for it. Responses to the four situations were averaged to form a selfish behavior index ( $\alpha = .73$ ). Findings showed that participants in the luxury condition were significantly more likely to behave in a selfish manner than control condition ( $M = 5.65$  vs.  $4.24, p = .008$ ). Furthermore, a 10,000 resample bootstrap revealed a significant indirect effect of type of product on selfish behavioral intentions via sense of social status,  $b = -.53$  (SE = .32), 95% CI [-1.38, -.06].

Although higher status is often associated with taking more for the self, it should be associated with acting in a generous manner when the behavior affords an opportunity to gain more status (Griskevicius, Tybur, and Van den Bergh 2010). Therefore, we predict that using a luxury (vs. non-luxury) product should make people more willing to donate money to charity in a public context. However, when there is no opportunity to display being helpful to others, luxury (vs. non-luxury) users will revert to selfish behaviors, which should result in donating less money to charity. Study 3 (2 (product type: luxury vs. control) by 2 (donation context: public vs. private) between-subjects designed) tested this hypothesis. The results showed that in the private context, women donated *less* money to

charity in the luxury condition versus the control condition ( $M = \$2.94$  vs.  $\$3.93$ ,  $p = .05$ ). However, in public, women donated *more* money to charity in the luxury condition compared to the control condition ( $M = \$4.63$  vs.  $\$3.20$ ,  $p = .027$ ).

Study 4 sought to “turn off” the effect of luxury consumption by considering a situation in which luxury products should not influence social behavior – when other people have similar products, luxury consumption should not effectively increase social status. To do so, in one of the conditions (luxury *without status boost*), we placed multiple Burberry products (e.g., umbrella, wallet, tote bag) along the route where these participants walked while wearing the Burberry scarf around campus. We found that women in the luxury condition donated significantly more money to charity than women in the control condition ( $M = \$4.35$  vs.  $\$3.47$ ;  $p = .047$ ). Thus, replicating the novel finding from study 3, women wearing a Burberry scarf became more charitable when they had an opportunity to donate in public. By contrast, wearing the same luxury scarf had no effect on donations when the luxury product did not enhance status. There was no difference in donations in the luxury *without status boost* condition and the control condition ( $M = \$3.38$  vs.  $\$3.35$ ;  $p = .84$ ). Finally, perceived social status once again statistically mediated the effects ( $b = .24$  ( $SE = .13$ ), 95% CI [.04, .61]).

This research makes several important contributions. First, these studies are the first to examine the psychological and behavioral consequences of luxury consumption. Rather than measuring pre-purchase desires, our experimental approach involves actual use of luxury products and observations of behavior triggered by using these products. Second, we show that luxury goods have an impact that goes beyond the luxury user alone, whereas prior work on luxury consumption has examined well-being from the standpoint of the consumer. Finally, this research contributes by showing that the social costs of luxury consumption are not inevitable. Instead, we show that under the right conditions the use of luxury products can spur behavior that benefits other people.

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#### ***Losing Relationship Power or Getting Relationship Devotion: Luxury Gifts in Fledgling relationships versus Established Relationships***

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Men commonly offer expensive gifts to women in order to establish, maintain or restore romantic relationships. Extant research mainly focuses on the motivation of gift givers (Huang & Yu 2000; Belk & Coon 1993). Yet, little is known about receivers' attitudes. According to the social exchange theory (Homans, 1958; Baumeister & Vohs 2004), men's expensive gifts may be interpreted as an instrumental exchange: luxury for sex. Hence, luxuries become condemnable temptations and accepting luxury gifts creates feelings of obligation and puts women in a low power position. In this context, men's expensive gifts are undesirable for women in that they may make women lose relationship power.

On the other hand, women tend to make higher parental investments than men. In this perspective, evolutionary psychology posits that women prefer resourceful men, who can make them feel safe by virtue of removing their concerns for survival, allowing them to make the necessary parental investments (i.e. breeding and nurturing) (Buss 1989; Saad & Gill 2003). Goods and especially luxuries are not only economic commodities but also vehicles of abundant resources and status. Consequently, offering luxuries to potential partners signals not only men's financial ability, but also their willingness to invest in relationships, namely, devotion.

The purpose of the present research is to test the proposition that women can have both positive and negative attitude towards men's luxury gifts, depending on relationship type (viz. fledgling vs. established relationships). The significant difference between these two relationships involves the relative strength of a communal norm versus an exchange norm (see Clark & Mills 1979, for details on these norms). A communal norm is not established in fledgling relationships, and thus the default exchange norm creates a feeling of an obligation or debt for receivers. Thus, a status of low relationship power ensues if women accept luxury gifts; this should make women negatively disposed to luxury gifts. In established relationships, in contrast, the receipt of benefit does not create a specific obligation because of the default communal norm. Furthermore, giving luxury gifts in established relationships may signal men's devotion. Three studies support this line of reasoning.

**Study 1** The study (N=98 female, relationship type: fledgling relationship vs. established relationship, between subjects) provides initial evidence that luxury gifts are not always desirable for women and that the difference of relationship norms in fledgling versus established relationships affects relationship power. Participants were told to imagine that they were with a man in a relationship in which they either 'try to make a good impression; talk about their families, hobbies and past experiences' (fledgling relationship), or 'feel like one person; meet families and friends' (established relationship) (Avtgis, West, & Anderson 1998). In addition, participants were told to imagine that the man bought a luxury gift for them. The relationship power (men over women) was measured by indicating the extent to which the male partner would obtain relationship dominance. The relationship norms and women's attitude towards men's luxury gifts were measured too. ANCOVA (age as the covariate in all studies) revealed that attitudes towards men's luxury gifts were more positive in established than in fledgling relationships,  $M = 5.64$  vs.  $3.39$ , respectively,  $F(1,95)=55.54$ ,  $p < .001$ . The indirect effect of relationship type on attitude was through relationship power (95% bias corrected,  $CI=.12, .88$ ); supplementary analyses confirmed the causal link of *relationship norm-relationship power* ( $CI=.01, .43$ ) (Hayes 2008), see fig. 1.

**Study 2** Given that luxury gifts may make women lose relationship power and thus affect women's attitude negatively, we expect that when women acquire relationship power before receiving a gift, they may not react negatively. Study 2 (N=82 female, women acquire relationship power prior to receiving luxury gifts: yes vs. no, between subjects) examines this idea. The status of women's acquired relationship power was manipulated (note that, the relationship type in both conditions was a fledgling relationship). As expected, women's attitude towards luxury gifts was more positive when they had acquired relationship power before men offered the gift than when they had not,  $M=4.95$  vs.  $3.70$ , respectively,  $F(1,79)=12.36$ ,  $p=.001$ . Mediation analyses further confirmed our expectation, see fig. 2.

**Study 3** Though previous studies confirmed the role of relationship power in women's attitude formation, it is not clear how luxury gifts signal devotion. We posit that luxury versus non-luxury gifts signal a more committed partner, but this should only occur in established but not in fledgling relationships. Accordingly, the study (N=145 female, 2 (relationship type: fledgling relationship vs. established relationship)  $\times$  2 (gift type: non-luxury vs. luxury), between subjects) investigates the integrated effect of relationship power and perceived devotion on women's attitude. Besides the manipulation of gift type, the scenario was similar to that of previous studies. Relationship power, perceived devotion and women's attitude were measured. Analyses revealed a significant interaction between relationship type and gift type on attitude,  $F(1,140)=20.48$ ,  $p<.001$ . Specifically, non-luxury gifts were preferred to luxury gifts in fledgling relationships,  $M = 4.60$  vs.  $3.03$ , respectively,  $F(1,140)=22.46$ ,  $p<.001$ , whereas luxury gifts were somewhat preferred to non-luxury gifts in established relationships,  $M = 5.91$  vs.  $5.27$ ,  $F(1, 140)=3.17$ ,  $p=.077$ . The indirect effect of relationship type  $\times$  gift type on attitude was mediated simultaneously by relationship power ( $CI=.01, .54$ ) and perceived devotion ( $CI=.25, 1.15$ ) (Muller, Judd, & Yzerbyt 2005), see fig. 3. More importantly, further analyses revealed that, for fledgling relationships, the indirect effect of gift type on receivers' attitude was through relationship power ( $CI=-1.28, -.17$ ) but not devotion ( $CI=-.39, .47$ ); for established relationships, the indirect effect of gift type on receivers' attitude was through devotion ( $CI=.24, 1.03$ ) but not relationship power ( $CI=-.30, .09$ ) (Hayes 2008).



Three studies provide consistent evidences to back up our proposition that women do not always prefer luxury to non-luxury gifts. Beyond the competing predictions from exchange theory and evolutionary theory, the present study highlights the distinction between fledgling and established relationships in which women may reject men's luxury gifts as to reserve her relationship power, and may accept it as to receive his devotion, respectively. The results also confirmed that the proposed default relationship norms, which help explain why either reasoning (viz. relationship power vs. relationship devotion) happens.

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### ***Sound Symbolism and Perception of Luxury versus Basic Brands***

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Luxury brands are perceived as psychologically more distant than necessity goods (Trope & Liberman, 2010). Luxury brands maintain an exclusive image which is different from an everyday outlook of a basic brand. In this research, we use sound symbolism to investigate the link between psychological perception of 'luxury-ness' and the phonetic structure of a brand-name. Specifically, we hypothesize that luxury brand-names employ certain phonetic features which typically deviate from the patterns of straightforward everyday speech and imbue these brand-names with an air of "luxuriousness" which helps maintain their perceived exclusivity. Linguists have studied phonetic characteristics of a 'name' using sound symbolism and they claim that all spoken words are composed of basic sound units called phonemes (/ba/) and a phoneme itself, even in a fictitious word, can convey meaning and influence human emotions (Jacobson & Waugh, 1987). This phenomenon is not exclusive to English speakers and has been documented across many cultures, languages and age-groups (Shrum et al, 2012; Baxter & Lowery, 2011). Indeed, children as young as five have well-formed associations between specific sounds and their meanings.

Past linguistic research suggests that the phonemes in proper names often have features which make them feel 'right' (Smith, 1998; Hernandez, 2013; Danesi, 2011). For example, Smith, 1998 reports that that 35 out of 42 winning candidates in the US presidential elections also had a higher 'comfort score' or linguistic attractiveness. Linguists have also shown that the clarity of a name and certain combinations of the vowels and consonants can enhance or decrease its' appeal (Smith, 1998; Klerk and Bosch, 1997; Crystal, 1995). For example, affricates in a name cause undue friction and turbulence in the perceived articulation and these, together with high and back vowels, are perceived as displeasing (Smith, 1998; Jenkins et al, 1964; Pogacar et al, 2014). Nasals sounds (/ng/ in Samsung) on the other hand are argued to add softness, easiness and smoothness to names (Smith, 1998; Whissell, 1999; Johnson et al, 1964; Jenkins et al, 1958) and are commonly used in popular English nicknames (Pogacar et al, 2014).

Given this background in linguistic literature, we explored the phonetic patterns of existing brand-names across studies 1 and 2. In study 3, we used the phonetic differences to create hypothetical basic and luxury brand-names which were tested in a semantic priming study to support our hypothesis.

### **Study 1: International Phonetic Alphabet (IPA)**

First, we analysed the phonetic differences in the written form of the basic and luxury brand-names using the IPA notation. A chi-square test to examine the relationship between the type of brand and the use of back and high vowels, nasals and affricates revealed significant differences between basic and luxury brand-names—(Back and high vowels- $X^2(3,76)=13.531, p=0.004, \phi=0.42, p$ -Fisher's exact test(FET)=0.002; Nasals- $X^2(1,76)=6.136,$

$p=0.013, \phi=0.284, p(\text{FET})=0.018$ ; Affricates- $X^2(1,76)=3.950, p=0.047, \phi=0.228, p(\text{FET})=0.06$ ). The test revealed a significantly higher use of back and high vowels, nasals and affricates among luxury brand-names as compared to the basic brand-names.

Significant differences were also found between the number of syllables and stressed vowels with basic brand-names having a preponderance of mono and bi-syllabic names and unstressed vowels and luxury brand-names exhibiting greater multi-syllabic names and stressed vowels (Syllables- $X^2(1,76)=11.127, p=0.001, \phi=0.383, p(\text{FET})=0.001$ ; Stressed vowels- $X^2(1,76)=17.021, p<0.001, \phi=0.473, p(\text{FET})<0.001$ )

### **Study 2: Spectral Analysis**

We then analysed the acoustic wave differences between luxury and basic brand-names using PRAAT spectrogram analysis software. Differences were found in the vowel frequencies and bandwidth structure between luxury and basic brand-names. A t-test of the F1 formants of both category of brands was found to be marginally significant (Basic brands(Hz)-625.51, SD-165.04; Luxury brands(Hz)-578.51, SD-144.64;  $t(147)=-1.849, p=0.06$ ) indicating that vowels in basic brand-names originate lower in the oral cavity than those in luxury brand-names. Vowel plots of all brand-names showed clusters of vowels demarcated towards the back and lower back of the oral cavity in the case of luxury brand-names and towards the front and central part of oral cavity for basic brand-names.

Many of the luxury brand-names were also found to end in a phonetic vowel sound compared to the basic brand-names. A chi-square test and a binary logistic regression confirmed a significant difference (Presence/absence of phonetic vowel ending-Pearson  $X^2(1,76)=4.258, p=0.039$ ; Binary logistic regression  $X^2(3)=19.762, p<0.001, \text{Nagelkerke-}R^2=0.305$ ; Vowel stress-Wald's- $X^2(1)=4.713, p=0.03, \text{Exp(B)}=6.329$ ; Presence of High/Back vowel- Wald's- $X^2(1)=5.289, p=0.021, \text{Exp(B)}=2.214$ ; Presence of 'ending-vowel sound'-(Wald's- $X^2(1)=1.006, p=0.31, \text{Exp(B)}=0.545$ ).

### **Study 3: Semantic Priming**

Having identified systematic differences in the phonetic structure of basic and luxury brand-names, we then set out to test the hypothesis that these differences convey meaning that allow consumers to accurately classify brand-names as being either luxury or basic.

Forty-seven hypothetical basic and luxury brand-names were generated using the patterns of phonetic differences identified in the previous two studies. Subjects then classified these brand-names as "basic" or "luxury" in a questionnaire and in a cross modal (audio-visual) semantic priming task. Results showed that brand-names constructed from the hypothesised phonetic structure of basic brands were perceived as 'more basic' and brands constructed from the hypothesised phonetic structure of luxury brands were perceived as 'more luxurious' (Basic-M=3.48, SD=0.51; Luxury-M=4.61, SD=0.60;  $t(60)=-7.927, p<0.001$ ). In addition, hypothesised luxury brand-names were 'felt more important' than basic brand-names (Basic-M=3.08, SD=1.10; Luxury-M=4.12, SD=1.21;  $t(60)=-3.517, p=0.001$ ).

Results of semantic priming task confirmed that the phonetic structures of hypothetical basic and luxury brand-names were perceived as congruent, and implicitly associated with, the concept of 'basic and luxury' (Response latencies-Congruent block-Basic brands=424.45ms, Luxury Brands=418.36ms; Incongruent block-Basic brands=428.48ms, Luxury Brands=423.74ms;  $\Delta(\text{Priming effect})$ -Basic brands-4.04ms, Luxury Brands-5.38ms; Main effect of Brand was significant  $F(1,30)=10.869, p=0.003, \text{Observed power}=0.891, \eta_p^2=0.266$ ; Main effect of target word was not significant- $F(1,30)=0.036, p=0.851$ ; Interaction of Brand and target word was significant- $F(1,30)=6.293, p=0.018, \text{Observed power}=0.68, \eta_p^2=0.173$ ).

## Discussion

In this paper, we used IPA and spectral study to show the phonetic differences between basic and luxury brand-names. Specifically, we show that despite their premium appeal, luxury brand-names are typically constructed from non-conventional human speech patterns that signal psychological distance. Using these patterns to create hypothetical brand-names, we subsequently found that these differences in phonetic structure provide semantic clues that allow consumers to accurately classify brand-names as basic or luxury. The data provide a rich resource of building blocks for the future creation of luxury brand-names by marketing practitioners.

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## ***Individual Papers: Getting Personal: Ego, Identity and Consumption***

### ***The Egocentric Effects of Personal Change on Perceptions of Brand Change***

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The manner in which consumers view themselves can influence their perceptions of brands. Indeed, a growing body of research on implicit egotism has found that consumers' global attitudes toward themselves transfer to self-associated stimuli (Brendl, Chattopadhyay, Pelham, and Carvallo 2005; Perkins and Forehand 2011). Although this valence transfer is well-established, it remains unclear whether self-evaluations that involve a broader definition of the self—one encompassing both past and present selves—will similarly transfer to external entities. The present research investigates whether self-evaluations of one's improvement over time (Albert 1977; Wilson and Ross 2001) color perceptions of improvement in brands. In exploring this process, we address the underexplored question of what influences consumers' perceptions of improvement in products and brands. Understanding this is of critical importance, since perceptions of improvement and dissimilarity are key drivers of the decision to upgrade to new versions of a brand's product (Okada 2001, 2006).

Building on egocentrism categorization (Weiss and Johar 2013)—the idea that individuals anchor their brand evaluations on self-evaluations and assimilate or contrast these judgments depending on whether the brand's level of self-connection—we propose that consumers anchor product improvement judgments on perceptions of change between their past and present selves. Thus, we examine whether self-evaluations involving both past and present selves can influence product evaluations, which responds to Weiss and Johar's call for further research on the role of the different facets of the self in egocentric categorization. Across three studies, we find that consumers who see themselves as improving (vs. stable) over time perceive self-associated brands as similarly improving. Supporting an egocentric categorization process, we demonstrate that this effect is moderated by the focus of the temporal evaluations (i.e., self vs. other), dispositional egocentrism, and self-brand connection.

A pilot study established initial evidence for the core effect. We randomly assigned 100 participants to one of four conditions in a 2 (temporal change self-evaluation: stable or changing) x 2 (desirability: desirable or undesirable) between-subjects design. To manipulate temporal change self-evaluations, participants described three ways they have been changing or stable over the past ten years. We also manipulated whether they focused on positive or negative dimensions to test whether this is a motivated or automatic process. Next, participants rated the improvement between the Apple iPhone 4s and 5s. To rule out the alternative explanation that focusing on one's own change or stability influences beliefs about whether things in general tend to be changing or fixed, we also measured implicit theories of change (Dweck, Chiu, and Hong 1995). Consistent with our predictions, we found that participants who

focused on their change (vs. stability) over time saw greater improvement in the iPhone over time ( $M_{\text{change}} = 3.61$ ,  $M_{\text{stable}} = 3.18$ ,  $F(1, 95) = 4.96$ ,  $p < .05$ ). Furthermore, this effect was not moderated by the desirability of perceived change in the self ( $F < 1$ , NS), suggesting that the transfer of temporal change self-evaluations to brands may be an automatic process. Moreover, our manipulations did not affect implicit theories ( $F < 1$ , NS).

Having demonstrated the basic effect, in study 1 we tested the underlying egocentric process. Aligned with prior research (Zell and Alicke 2009), if the proposed transfer effect only arises when focusing on change or stability in the self—but not in someone else—this constitutes evidence of an egocentric process. Moreover, the transfer of self-views from consumers to brands should occur more naturally for self-associated brands, and thus self-brand connection (SBC) should further moderate this effect. Thus, we measured Samsung SBC and manipulated whether participants described ways they or a casual friend has been changing or stable over the past five years in a 2 (temporal change self-evaluation: stable vs. changing) x 2 (target: self vs. other) between-subjects design. Finally, we measured their perceptions of improvement between the Samsung Galaxy S4 and S5 phones. Supporting our predictions, a linear regression revealed a significant three-way interaction among temporal evaluation, self-brand connection, and object of temporal evaluation ( $b = .03$ ,  $t = 2.76$ ,  $p < .01$ ). Participants who saw themselves as changing (vs. stable) perceived greater improvement in the Samsung Galaxy when SBC was high ( $b = .65$ ,  $t = 2.36$ ,  $p < .05$ ); however, when SBC was low, participants who saw themselves as changing (vs. stable) actually perceived directionally less improvement in the Samsung Galaxy ( $b = -.49$ ,  $t = -1.63$ , NS). In contrast, participants who saw their friend as changing (vs. stable) did not differ in their perceptions of improvement in the Samsung Galaxy at high SBC ( $b = -.49$ ,  $t = -1.65$ , NS) or SBC ( $b = -.04$ ,  $t = -.14$ , NS).

Finally, study 2 tested the moderating effects of trait egocentrism and SBC to provide convergent evidence of the egocentrism-driven process. In a 2 (stability vs. change) x 2 (favorite vs. least favorite brand) between-subjects design, participants first named either their favorite or least favorite brand—a proxy for SBC—and then completed the same temporal change manipulations from study 1. Next, participants rated the improvement in the brand they named over the past five years, and then completed the Private Self Consciousness Scale, a measure of trait egocentrism (Scheier and Carver 1985). A linear regression revealed a significant temporal self-evaluation x brand type x trait egocentrism interaction ( $b = 2.45$ ,  $t = 3.17$ ,  $p < .01$ ). As expected, at high levels of egocentrism, participants in the change (vs. stability) condition perceived greater change in their favorite brands ( $b = 1.25$ ,  $t = 2.99$ ,  $p < .01$ ), but not in their least favorite brands ( $|t| < 2$ , NS). At low levels of egocentrism, there was no effect of temporal self-evaluation or brand type (all  $|ts| < 2$ , NS).

In demonstrating these effects, this research makes three theoretical contributions. First, we enrich the literature on egocentric categorization and self-evaluative transfer by exploring the effects of facets of the self-concept beyond the present self. Second, we extend research on product upgrade decisions by informing the process through which consumers perceive improvement in products, which is critical to the ultimate purchase decision. Third, we contribute to research on temporal change self-evaluations by providing an initial investigation of their influence on consumer behavior.

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### ***Feeling Physically Short Increases Compensatory Consumption***

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Recent research has documented that physical height significantly impacts outcomes in people's personal and social life. However, no research has yet investigated whether and how the psychological experiences associated with physical height can affect people's decisions. We study whether feeling short can pose a threat to people's identity, and ultimately affect their behavior in the marketplace.

Height is a physical feature that is crucial for evolutionary fitness. In the ancestral past, being small was detrimental for survival as it entailed being inferior in the ability to gather resources and fight enemies (Freedman, 1979). Although these disadvantages are less critical today, even in modern day societies being short seems to negatively affect several life outcomes. Specifically, shorter people tend to have lower salaries, lower ranking jobs, and are generally less likely to become leaders (Egolf and Corder 1991; Frieze, Olson and Good 1990; Highman and Carment 1992; Melamed and Bozionelos 1992; Young and French 1996). Moreover, shortness triggers negative social perceptions, with studies reporting that short people are judged as less competent, confident, and successful compared to taller people (Jackson and Ervin 1992; Judge and Cable 2004; Lindeman 1999; Melamed 1994; Young and French 1996). Shorter people, finally, tend to have a more negative self-image compared to their taller peers (Brewer and Riley 2009; Hood 1963). In sum, large evidence indicates that shorter people might suffer from the actual and psychological experience of physical shortness.

In this research, we propose that feeling physically shorter than others can threaten a person's identity and social status. This feeling, that can be chronic or momentarily active, can in turn trigger compensatory behavior, such as privileging status-enhancing products in a consumption context and seeking high-power positions while interacting with others.

In Study 1 we explored whether chronic perceived height is associated with compensatory purchases of high-status products. Participants went through three scenarios in which they chose between spending a certain amount of money on a high-status product (e.g., Armani sunglasses) and saving the money. In each scenario the participants expressed their relative preference between the two options on a scale from 1 (definitely save the money) to 7 (definitely spend the money). Afterwards the participants reported how short/tall they considered themselves to be (1 = very short, 7 = very tall) and how short/tall they felt relative to their peers (1 = much shorter, 7 = much taller). The results showed that participants who perceived themselves to be shorter had stronger preferences for spending money on high-status products as opposed to saving money. Importantly, participants also reported their actual height. Although actual height and perceived height were correlated, only perceived height predicted participants' preferences for conspicuous spending.

In Study 2 we examined the causal relationship between perceived height and compensatory behavior by considering people's preferences for a high-status role in an economic game. We manipulated perceived height by asking participants to recall three situations in which they felt short vs. tall. Participants were then explained the rules of the dictator game. These include that a sender can decide how much of her endowment to give to the receiver, who has no choice but to accept what she is given. We observed participants' preference for participating in the game as senders (a high-status role) or receivers (a low-status role). Reflecting their hypothesized stronger need to compensate, participants in the short condition were more likely to choose the role of a sender than participants in the tall condition.

In Study 3 we examined whether the opportunity to engage in self-affirmation can serve as a buffer against the identity threat induced by perceived shortness and thereby attenuate the effects of perceived shortness on compensatory consumption. We manipulated self-affirmation by asking one group of participants to rank and elaborate on personal values that are important to them in life (e.g., work, religion). Participants in the control condition were asked to rank and elaborate on several features of office chairs (e.g., cushion material, mobility). Afterwards, participants indicated their preferences for spending money on high-status products (=7) vs. low-status products (=1) in three categories (luxury vs. economy car, home decoration vs. maintenance, upscale vs. local restaurant).

At the end of the survey we measured chronic perceptions of height with the measures used in Study 1. As expected, self-affirmation reduced preferences for high-status products for individuals who felt short, but not for individuals who felt tall.

Our findings contribute to the recent literature on the effects of physical and genetic traits on decision-making (Gorlin et al. 2011; Simonson and Sela 2011), by showing that physical height affects consumer decision-making. In particular, we showed that the experience of physical shortness threatens people's identity and leads to compensatory choices in the marketplace. This finding paints a less pessimistic picture of the psychological and social consequences of height. While previous work outlined that shortness seems to (inevitably) lead to detrimental life outcomes (Judge and Cable 2004), and counterproductive interpersonal coping-strategies, like aggression (Willoughby and Blount 1985), the present work illustrates compensatory strategies that are less socially harmful and could provide potent means to bolster people against the threat of feeling short. Importantly for our understanding the genetic and social causes of this phenomenon, *feeling* short affects status-seeking behaviors above and beyond *being* short. Future research should investigate the nature of the psychological process behind this effect (e.g., whether it operates with or without individuals' awareness) and whether and how the psychological experience of physical shortness compares to other known identity threats (e.g., social exclusion). Additionally, it seems promising to identify situation- and person-dependent variables that aggravate or attenuate the threat of feeling and being physically short. This could enable researchers to suggest useful coping strategies for the consumers affected.

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### ***What Makes Gift Receivers Happy? The Role of Self-Identity and Gift-Identity Congruence on Expected Happiness***

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What makes consumers happy is an important question that is receiving increased attention from consumer researchers (Dunn, Gilbert, and Wilson 2011). Prior research has found that consumers tend to maximize happiness when spending their money on experiences, rather than on material objects, because the former are perceived to be more social (Van Boven and Gilovich 2003), less prone to undesirable comparisons (Carter and Gilovich 2010), and less susceptible to hedonic adaptation (Nicolao, Irwin, and Goodman 2009) than the latter.

However, research has not yet examined if the same relationship exists for gifts – that is, purchases received from others. This gap in the literature is surprising, given that over \$550 billion dollars are spent annually during the holiday season (National Retail Federation 2013), ostensibly on options intended to maximize gift recipients' happiness.

Gifts include material objects and experiences purchased by a gift giver for an intended recipient (Otnes, Lowrey, and Kim 1993). The gift giver chooses a gift for the recipient taking into account various factors, such as how similar the recipient's tastes are to their own (Belk 1976). Importantly, gifts are often treated as tokens with symbolic value (Belk and Coon 1993), reminding consumers of intimate and shared memories between the gift giver and recipient. To the extent that happiness from gifts is based on their ability to cue such memories, material objects may serve as better symbols of the relationship between gift giver and recipient as material objects serve as a tangible reminder of the relationship between both gift giver and recipient. We therefore predict that, in contrast to purchasers, gift recipients will rate their happiness greater for material objects versus experiences. That is, the intended recipient type (oneself versus other) moderates the effect of the type of product (material versus experiential) on predicted happiness.

Gift givers often choose gifts that recipients would enjoy based on perceptions of recipient's tastes and interests (Otnes et al. 1993). In other words, gift givers choose gifts that are congruent with recipients' identities in the hopes of maximizing their happiness. We examine how gift and recipient identity congruence interact with product type to affect recipient happiness. We predict that under conditions of identity-gift congruence, gift recipients will rate their expected happiness greater for material objects due to the greater symbolic nature of material objects. Specifically, an identity-congruent material object will act as a better token or signal of the relationship between giver and receiver than an experiential object, and this in turn will increase happiness from the material gift. Conversely, under conditions of identity-gift incongruence, gift recipients will rate their happiness higher for experiential objects. That is, due to the lack of identity-gift congruence, gift recipients will experience the gift in the same manner as a purchase made for the self and prefer experiential objects as a result. We expect these effects to occur only under conditions of high relationship closeness between the gift giver and receiver. Under conditions of low relationship closeness, we expect the effects to be attenuated.

Study 1 was a 2 (recipient type: oneself vs. other) x 2 (option: material vs. experiential) between-subjects design. Participants recalled and described a time when they had purchased a product or received a gift worth about \$100 (Van Boven and Gilovich 2003). Participants were told to think of a material or experiential option. Happiness in this and subsequent studies was assessed with four 9-point happiness scales ( $\alpha = .76$ ; Van Boven and Gilovich 2003). Results supported the hypothesized recipient type X option interaction ( $F(1, 136) = 4.09, p < .05$ ). When purchasing for oneself, happiness was higher for experiential versus material options ( $M = 7.02$  vs.  $6.49$ , respectively), as expected. However when receiving a gift, these results reversed as we had predicted: participants reported higher happiness when receiving a material versus experiential option ( $M = 6.98$  vs.  $6.44$ ).

Study 2 consisted of two manipulated factors (gift congruence: congruent versus incongruent; option: material vs. experiential) and one measured factor (relationship closeness, continuous). Participants were first given an athlete identity prime (Reed 2004; Coleman and Williams 2013) before being instructed to imagine that they had received a gift from someone who had spent some time finding a gift to make them happy. Gift was manipulated to be either a congruent material or experiential sports gift (sports shoes vs. sports game ticket), or an incongruent material or experiential music gift (mp3 player vs. music concert ticket). Relationship closeness was measured with 3 seven-point scales ( $\alpha = .97$ ). Regression analysis found the expected gift congruence X option X relationship closeness interaction ( $\beta = -.5886, p < .05$ ). We used the Johnson-Newman technique (Spiller et al. 2013) to determine the value at which relationship closeness begins to affect gift preferences. This occurred when (mean-centered) relationship closeness is equal to  $.77$ , which is approximately a high level of closeness. When gift receivers perceived a high level of closeness to the gift givers, receivers preferred identity congruent material gifts versus identity congruent experiential gifts. However, this effect reversed for identity incongruent gifts, such that experiential options were associated with greater happiness than were material options.

Study 3 used the same design as study 2 but manipulated relationship closeness by asking participants to imagine receiving the gift from a co-worker whom they were close to versus a co-worker they were not close with. We also tested for the mediating role of the gift acting as a symbol or token of the relationship ( $\alpha = .86$ ) using the bootstrapping method (Preacher and Hayes 2008). An ANOVA found the expected gift congruence X option X relationship closeness interaction consistent with the results in study 2 ( $F(1,221) = 4.15, p < .05$ ). More importantly, we found partial moderated mediation such that when gift identity was incongruent and the gift was an experience (Effect =  $.55$ ;  $CI_{95\%}$ :  $.23$  to  $.92$ ) and when gift identity was congruent and the gift was a material object (Effect =  $.33$ ;  $CI_{95\%}$ :  $.02$  to  $.69$ ), the gift as a symbol or token mediated the relationship between our independent variables and expected happiness.

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### ***In Pursuit of Social Identity Preservation: Motivated Forgetting Due to Collective Remembering***

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Consumers often share their experiences with others through social interactions but whether sharing enhances or attenuates memory is little understood. Our research addresses this gap and explores social sharing effects on consumer memory. We propose that while sharing can enhance memories through rehearsal, it may also facilitate forgetting by a belief of “group mind”- perceiving that the conversational partner(s) will remember the experience, thereby reducing the motivation to remember by oneself (Wegner 1985).

Prior research has found that talking to others about our experiences may help us relive the event and reinforce memories (Blumen and Rajaram 2008). However, this advantage may not hold when the memory is shared with close others. Literature on transactive memory systems (TMS) suggests that group members assign memory responsibilities resulting in higher overall group performance but lower individual memories (Wegner 1987). For example, relying on transactive partners such as the Internet (Sparrow, Liu and Wegner 2011) and digital cameras (Henkel 2014) to preserve memories may lead to poorer memories for the shared events since the sharers encode less information due to reliance on the shared repository for future memory access (e.g. “I have a picture of the event and hence don’t need to remember it since I can go back to the picture any time”). Adopting a similar logic, we suggest that sharing experiences with close friends may trigger forgetting because of the reliance on the friends’ memory, i.e. consumers believe that there is a secure repository for their memories and hence don’t feel obliged to remember these experiences themselves. Thus, after the memory is shared, details of the individual memory are replaced by a label of the memory location (e.g. “I remember I have told my best friend”), fostering a secure feeling of identity preservation. We further suggest that this effect is moderated by identity-relevance such that memories high (low) in identity-relevance are more (less) prone to the transactive effect.

Study 1 was a 2 (identity-relevant vs. irrelevant) x 2 (shared with close friend vs. acquaintance) between-subjects study. 51 students read a shopping scenario, which was either relevant or irrelevant to a student identity (Berger and Heath 2007) and wrote down a conversational script for how they would recount their experience to their best friend/new classmate. They then participated in several unrelated studies for 60 minutes prior to recalling their shopping experience. This free recall constituted our dependent measure.

An ANOVA revealed the expected significant interaction between social sharing and identity-relevance on recall ( $F(1,47)=17.5, p<.001$ ). Identity relevance had a positive effect on memory when the recipient was a new classmate ( $B=3.88, t=3.42, p<.01$ ) but a negative effect when the recipient was a best friend ( $B=-2.28, t=-2.43, p<.02$ ). Hence, for identity-relevant experiences, consumers forgot more after sharing their experience with best friends as compared to classmates ( $M_{friend}=1.83, M_{newclassmate}= 5.00$ ); however, for identity-irrelevant experiences, respondents remembered more details after sharing it with best friends than classmates ( $M_{friend}= 4.11, M_{newclassmate}=1.13$ ). Thus study 1 supported our contention that sharing identity-relevant experiences would result in memory enhancement (decay) when shared with distant (close) others.

Study 2 extends study 1 in ways: first, we extended the delay between the manipulations and recall measure to 48 hours to provide a more conservative test of our hypotheses. Second, we added another sharing condition- best friend with poor memory - to test whether TMS truly underlies our effects. Since we posit that the forgetting effect after sharing with close others is due to belief in a collective memory system, forgetting ought to be mitigated if the sharing partner is perceived to have poor memory, rendering them an unsecure repository. 93 students participated in a 2 (identity-relevant vs. irrelevant experience) x 3 (sharing with new classmate vs. best friend vs. best friend with poor memory) between-subjects study. The identity prime and study procedure were similar to study 1.

Regression analyses revealed a significant interaction between identity-relevance and sharing partner on corrected-free-recall ( $F(2,87) = 9.07, p<.001$ ). Similar to study 1, identity-relevance reduces memory when the sharing partner was a best friend ( $B=-2.10, t=-2.25, p<.03$ ) as compared to a classmate ( $B=3.34, t=3.73, p<.001$ ). However, in line with our predictions, sharing with a best friend who



has poor memory also resulted in memory enhancement rather than decay ( $B=1.45, t=1.55, p>.12$ ). For identity-relevant experiences, consumers remembered more of the experience when it was shared with a classmate than the other two conditions ( $M_{friend}=1.08, M_{newclassmate}=4.40, M_{friendwithpoormemory}=2.95$ ); for identity-irrelevant experiences, consumers forgot more in the new classmate and best friend with poor memory conditions than the best friend condition ( $M_{friend}= 3.18, M_{newclassmate}= 1.06, M_{friendwithpoormemory}=1.50$ ). These results provide evidence for reliance on a transactive memory system as the underlying mechanism for our effects.

Study 3 advances our findings in several ways. First, we used gender identity rather than student identity and a non-student adult sample to generalize our results. Second, we added a condition wherein we informed respondents in advance that they would share their experience with a best friend. Adding this condition allowed us to test if the forgetting effect is due to errors at encoding versus retrieval. Third, if sharing activates TMS, eliminating sharing should revive the identity advantages in recall. 154 adults participated in a 2 (identity relevant vs. control) x 3 (knowing about sharing with best friend before encoding vs. not knowing before encoding vs. no sharing) between-subjects study. As expected, we found a significant interaction of the two independent variables on corrected free recall ( $F(5,148) = 4.90, p < .001$ ). A regression analysis reveals enhanced recall for the no-sharing condition with no differences between the knowing and not-knowing in advance conditions ( $p's > .1$ ).

Our research documents that sharing consumption experiences can enhance or decay memories depending on the experience's identity-relevance and the sharing partner. For high identity-relevant experiences, sharing with acquaintances (close partners) enhances (reduces) memory through rehearsal (reliance on partner memory). To our knowledge, these results are among the first in consumer research to investigate the motivated forgetting in pursuit of identity preservation.

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## ***Individual Papers: Filling up the Tank: Research on Food Decisions***

### ***When and Which Consumers Use Calorie Information to Make Lower Calorie Food Decisions***

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In an effort to promote healthier food choices and fight obesity, the Patient Protection and Affordable Care Act includes a provision requiring chain restaurants with 20 or more locations nationwide to provide calorie information for food items on their menus. Although calorie labeling in chain restaurants has not yet been implemented nationwide, similar laws have already been adopted in many United States jurisdictions (Krieger et al., 2013). However, doubts have been raised as to whether calorie labels are effective at decreasing calorie intake (Loewenstein, 2011). In addition, existing research on the effectiveness of calorie labels has produced mixed results (Kiszko et al., 2014). This previous research has typically focused on examining *whether* adding calorie information to menus has an impact at a simple yes-or-no level. In contrast, the present research consists of five studies examining *when* and *which* consumers use calorie information as policy makers intend—to make lower calorie food decisions.

We structure the present research around the central notion that calorie information is a cue to the extent to which a product addresses a health goal. Using this structure, we examine four situational factors that can alter the extent to which consumers use calorie information to make lower calorie food decisions. Specifically, we propose that whether calorie information is used to make lower calorie food decisions depends upon the following situational factors: whether a health goal (vs. a taste goal) is activated (Studies 1-2),

how much health goal progress a consumer has made (Study 3), the presence of an alternative cue (besides calorie information alone) about the extent to which a food item addresses a health goal (Study 4), and the presence of a cue that can alter how consumers map calorie information onto product healthiness (Study 5). Moreover, we suggest that sensitivity to some of these different factors will depend upon individual differences in restrained eating: restrained eaters will tend to use calorie information to make lower calorie food decisions across a wider range of situations, whereas unrestrained eaters will tend to use calorie information to make lower calorie food decisions only under a much narrower range of situations.

In Studies 1 and 2, participants were exposed to a health or taste goal cue. Because people assume that the number of calories in an item is an indication of the product's healthiness (Booth, 1987), we predicted and found that consumers—regardless of dietary restraint—for whom a health goal is activated will use calorie information as intended—to make a lower calorie food choice—regardless of their level of dietary restraint. Similarly, because consumers high in dietary restraint (“restrained eaters”) compared to consumers low in dietary restraint (“unrestrained eaters”) are highly sensitive to their eating behavior and consciously and continually monitor it (Herman & Mack, 1975), we predicted and found that even when a taste goal was activated they used the calorie information as intended. On the other hand, however, because the goal to consume fewer calories is weaker and less persistent for unrestrained eaters (Mohr, Lichtenstein, & Janiszewski, 2012; Stice, 1998), we predicted and found that when a taste goal was activated, unrestrained eaters do not use the calorie information as intended.

In Study 3, participants were asked to list three or seven times that they had eaten healthily in the past week. We predicted and found that when people are reminded of the progress they have made toward their health goal, they feel licensed to indulge, and do not use the calorie information as intended, regardless of their level of dietary restraint (Fishbach & Dhar, 2005).

In Study 4, we manipulated whether consumers were asked their purchase intentions for a chicken wrap at a restaurant with a health halo (Subway) or a restaurant without a health halo (McDonald's) (Chandon & Wansink, 2007). We found that when a restaurant has a health halo (Subway), which we argue can be used as an alternative cue to a product's healthiness, restrained and unrestrained eaters respond to the calorie information in different ways. Because of restrained eaters' heightened sensitivity to calorie information (Mohr et al. 2012), we found that regardless of whether a restaurant has a health halo, restrained eaters use the calorie information as intended. However, because a health halo can be used as alternative information that the products at a restaurant are healthy (Chandon & Wansink, 2007), and unrestrained eaters are less sensitive to calorie information (Mohr et al., 2012), we predicted and found that unrestrained eaters use the calorie information as intended when the restaurant does not have a health halo (i.e., it cannot be assumed that the food at the restaurant is healthy), but use the calorie information in an unintended way when the restaurant has a health halo.

Finally, in Study 5, we tested the effectiveness of an oft-proposed menu-board intervention that informs consumers about the recommended calorie limit per meal for adults. We propose that this intervention may alter how some consumers map calorie information onto product healthiness. Indeed, we found that the intervention had no effect on the food choices of unrestrained eaters but, because restrained eaters are highly sensitive to cues about what is and is not appropriate to consume (Knight & Boland, 1989), the intervention led restrained eaters to prefer any foods that fell underneath the calorie guideline. We find that this heightened preference may occur because restrained eaters believe that foods that fall beneath the calorie guideline are healthier.

To our knowledge, this paper is the first to systematically draw upon the central notion of calorie information as a cue to product healthiness to examine when and which consumers use calorie information to make lower calorie food decisions. In terms of practical contribution, our findings offer explanations for why calorie information often has mixed effects in the real world. In terms of theoretical contribution, our findings indicate that restrained eaters and unrestrained eaters respond differently to a variety of health-goal related cues, including health-goal activation cues and health halos.

### ***Who Serves Food Shapes Self-Evaluation and Eating Decisions***

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Eating meals that are served by someone else has become increasingly commonplace: 50% of all meals are consumed away-from-home and two-thirds of Americans eat out at least every other day (Stewart, Blisard, & Jolliffe, 2006). Being served offers convenience – but does it come at a cost for health? In this research, we investigate how one predominant feature of eating out, being served by someone else instead of serving oneself, affects eating behavior. Based on the literatures on agency and self-serving attributions, we theorize that being more versus less physically involved in the act of serving food differentially affords self-serving attributions of responsibility for one's eating decisions. We show that this process shapes how consumers feel about themselves post-consumption, and thus alters their food decisions pre-consumption.

### **Theoretical Background**

Various consumer research has shown that consumption experiences and behavior are significantly altered by the degree to which consumers are active in the process (Botti & McGill, 2006; Norton, Mochon, & Ariely, 2012). Agency –the sense of controlling one's actions– considerably influences judgment and decision-making, specifically by intensifying affective reactions (Botti & McGill, 2011; Landman, 1987). Accordingly, attributions of agency are consequential, and are distorted in self-serving ways to protect a positive self-view (Campbell & Sedikides, 1999; Miller & Ross, 1975). People seek to attribute responsibility for unfavorable outcomes to other factors (Arkin, Gleason, & Johnston, 1976; Blaine & Crocker, 1993) and self-reproach less when they can do so (Bandura, 1990)—especially in domains with high motivational pressure (Kunda, 1987).

One such domain for today's consumer is eating. A majority of Americans aspires to lose weight and eat healthily (Chernev, 2011; Gallup, 2012). Further, eating "right" is conceptualized as morally desirable (Chernev & Gal, 2010; Rozin, Ashmore, & Markwith, 1996; Stein & Nemeroff, 1995) and eating is intricately linked with self-conscious feelings, e.g., many experience shame for eating indulgent foods (Ramanathan & Williams, 2007). We propose and show in eight studies that being served (versus serving oneself) encourages unhealthy eating because it affords an opportunity to reject responsibility for unhealthy eating and avoid negative self-evaluative feelings as a result.

### **Experiments**

**Study 1a** tested whether being served indeed encourages unhealthy eating in the field. People in a waiting room had the opportunity serve themselves a [take a pre-served] sampling cup of a healthy [unhealthy] snack. For the healthy snack, people were equally likely to consume regardless of who served. In contrast, for the unhealthy snack, people were more likely to consume when it was pre-served than when they had to serve themselves.

**Study 1b** replicated this finding in a controlled lab environment with different snacks.

**Study 2a** examined the influence of being served on portion sizes choices. Participants envisioned purchasing a healthy [unhealthy]

snack at a store where they self-serve [take a pre-served container] and selected 1 of 8 container sizes. Those who expected being served selected significantly larger sizes than those who expected self-serving. More important, this effect was qualified by the predicted healthiness $\times$ server interaction. Complementing studies 1a–b, for the healthy snack, people selected equal sizes irrespective of who served. Contrastingly, for the unhealthy snack, people selected significantly larger sizes when they expected being served versus serving themselves.

**Study 2b** examined real portion choices as a function of who serves. “Taste testing” an unhealthy dessert, participants chose a flavor and served themselves [were served] the dessert into a sampling cup. Critically, they chose their portion from four sizes. Corroborating study 2a, people who were served selected significantly larger dessert portions (in oz.) than people who had to serve themselves.

**Study 3a** established that healthiness and who serves interactively affect self-evaluative feelings. Participants imagined a cafeteria lunch where they served themselves [were served], and saw a photograph of their healthy [unhealthy] dish. Subsequently, participants indicated how good/justified/guilty/shameful they would feel after eating this meal (“positive self-evaluative feelings” index). Participants reported significantly more positive self-evaluative feelings for healthy versus unhealthy food. More important, however, this effect was qualified by the predicted healthiness $\times$ server interaction. For healthy food, people had similarly positive self-evaluative feelings regardless who served. Contrastingly, for unhealthy food, people had more positive self-evaluative feelings when they imagined being served by others versus serving themselves.

**Study 3b** showed that this effect is indeed mediated by feeling responsible for the food, such that self-serving forces consumers to accept, but being served offers an opportunity to reject, responsibility. In a 2(server) $\times$ 2(healthiness) between-subjects design, participants imagined a catered event where they served themselves [a server served them], and saw a photograph of their healthy [unhealthy] dish. Lastly, they reported their positive self-evaluative feelings after eating the meal, and how much responsibility they felt for their food.

Results for positive self-evaluative feelings fully replicated study 3a. Importantly, these patterns were mediated by feeling personally responsible. For healthy food, people assumed equal responsibility regardless who served. Contrastingly, for unhealthy food, people accepted significantly less responsibility when they imagined being served versus serving themselves.

**Study 4a** explored preferences for who should serve food given its healthiness. Participants imagined getting a healthy [unhealthy] dessert and indicated their preference for serving themselves versus being served, as well as their motivation to avoid responsibility.

Preference for being served was significantly stronger for the unhealthy than the healthy dessert, and this was mediated by motivation to avoid responsibility.

**Study 4b** examined server preferences in the field. Seminar students had healthy [unhealthy] beverages available to serve themselves and pre-served into cups. For healthy drinks, people were equally likely to choose serving themselves or taking pre-served cups. In contrast, for unhealthy drinks, they were more likely to choose pre-served cups than serving themselves.

Together, these studies indicate that being served encourages unhealthy eating by allowing consumers to reject responsibility, and thus feel better about themselves. Consumers anticipate the consequences of serving themselves unhealthy food and adjust their food decisions accordingly. Overall, our findings inform the literature on self-serving attributions by suggesting physical involvement as a boundary to motivated reasoning, offer new insight into consumers’ eating decisions, and present an actionable tool to encourage healthier eating.

***It Just Gets Better and Better: The Development of Sensitization for Food Consumption***

Chris Janiszewski, University of Florida, USA

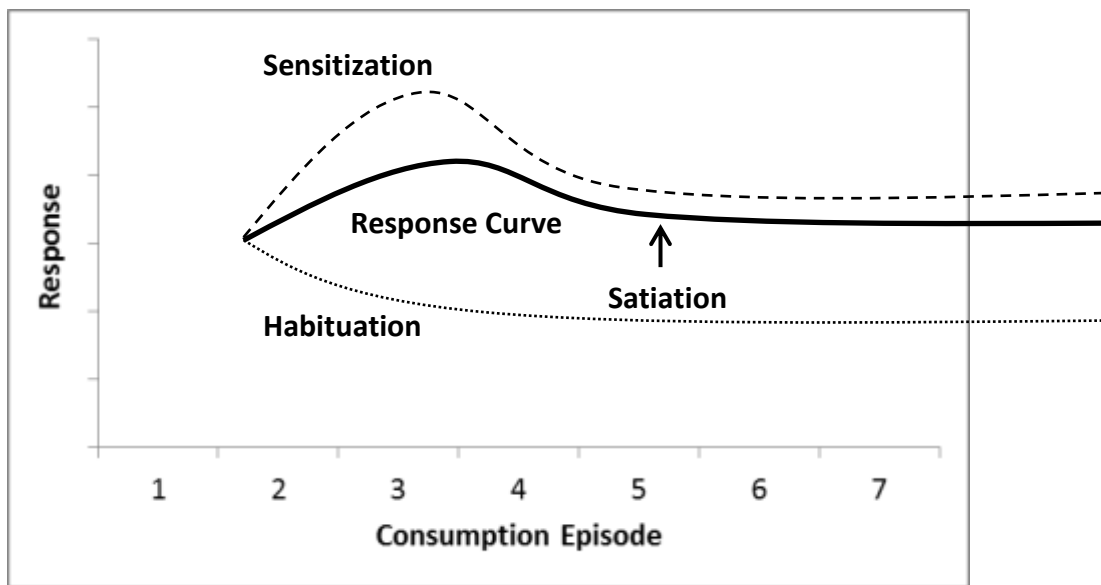
Cammy Crolic, University of Florida, USA\*

Prior literature shows that sustained food consumption will lead to habituation and satiation (Epstein et al. 2009). Habituation is the reduction in a physiological or behavioral response to a food stimulus that occurs with each additional consumption episode (see fig. 1). Satiation is the point at which there is no additional reward value associated with a forthcoming consumption episode, so consumption ceases.

Conversely, sensitization is the positive physiological or behavioral response to a food stimulus that occurs with each additional consumption episode. Sensitization is an increased liking of a food with each additional taste, followed by a return to neutral. Yet, little is known about sensitization (Epstein et al. 2007).

This research provides insight into the food sensitization, which is more likely to develop when food consists of a complex flavors and when a person appreciates this complexity. When repeated consumption episodes allow for a heightened awareness to different taste profiles, these experiences build so that each additional taste is experienced as better than the last. In effect, the complexity of the flavors in a food, and a person's ability to differentially represent these flavors on each taste occasion, allows for hedonic escalation of the taste experience.

**FIGURE 1**  
**SENSITIZATION, HABITUATION, AND SATIATION**



## Hypotheses

Prior research supports that hedonic responses to food (e.g., Galak et al. 2013) and non-food (e.g., Nelson, Meyvis, and Galak 2009) stimuli are sustained when there is more time between consumption experiences (Epstein et al. 2009). Intervening time between consumption episodes allows habituation to dissipate (dishabituation) so it exerts less negative impact on the hedonic response to the next episode. Thus, spacing consumption enhances the hedonic response to repeated consumption.

Sensitization operates in a different way than habituation, hence, responds to time between consumption episodes differently. Imagine that a food consists of layers of hedonic meaning (flavor). Each layer of meaning adds to the hedonic experience. Focusing on a new flavor each time increases sensitization which enhances the hedonic response to repeated consumption. Yet, the layers of hedonic meaning only enhance the hedonic response to the extent they can be remembered upon the next consumption experience. When consumption is spaced, memory for a single flavor becomes more difficult. When focusing on a different flavor each time, the memory is weaker and decays over time. Consequently, the hedonic response to repeated consumption is inhibited.

Our research encourages consumers to hedonically layer, versus not layer, across a series of consumption episodes. When there is layering, both sensitization and the hedonic response to a series of consumption episodes should increase. Further, if the series of consumption episodes in each of these conditions were to be spaced, the hedonic response in the non-layered condition should benefit more than the hedonic response in the layered condition.

H1: A series of consumption experiences should be increasingly more appreciated when consumption is massed and each episode adds an additional layer of hedonic experience, as compared to sustaining a single layer of experience.

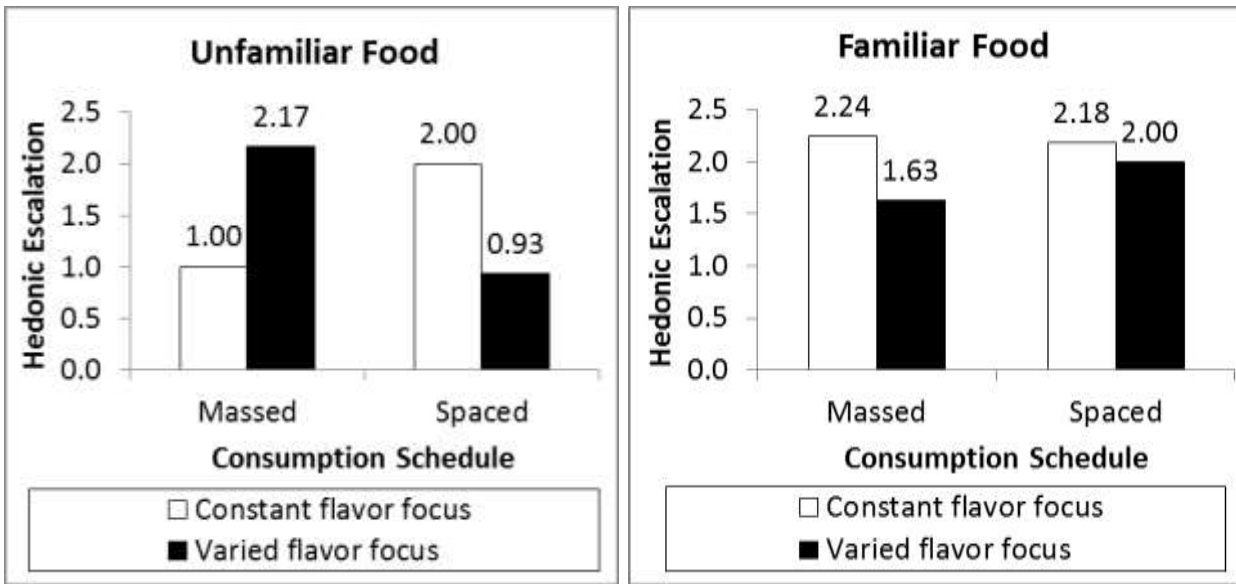
H2: A series of consumption experiences should be increasingly less appreciated when consumption is spaced and each episode adds an additional layer of hedonic experience, as compared to sustaining a single layer of experience.

## Pilot Study

This study shows that directing a person to attend to different flavor dimensions in a food enhances sensitization, but only for unfamiliar food. People that are familiar with a food's flavor dimensions do not benefit from focusing on flavor. The study design was a two (focus of each taste experience: constant, varied) by two (consumption schedule: massed, spaced) by two (prior experience: unfamiliar, familiar) between-subject design. 169 participants tasted five chips. Those in the constant condition focused on the overall flavor while those in the varied condition identified a new flavor after every taste. In the spaced condition, participants tasted a carrot in between each chip. The massed condition participants only ate chips. Prior experience was measured.

The dependent variable, hedonic escalation, was operationalized as the number consecutive times a person stated that the current taste experience was better than the prior taste experience and would range from zero (the person said the second taste was worse than the first) to four (each taste experience was better than the prior taste). Results showed a flavor focus by consumption schedule by prior experience three-way interaction on hedonic escalation ( $F(1, 153) = 7.11, p < .01$ ). The data were further analyzed within each prior experience condition. For participants unfamiliar with the product, there was a flavor focus by consumption schedule interaction on hedonic escalation ( $F(1, 155) = 8.15, p < .01$ ).

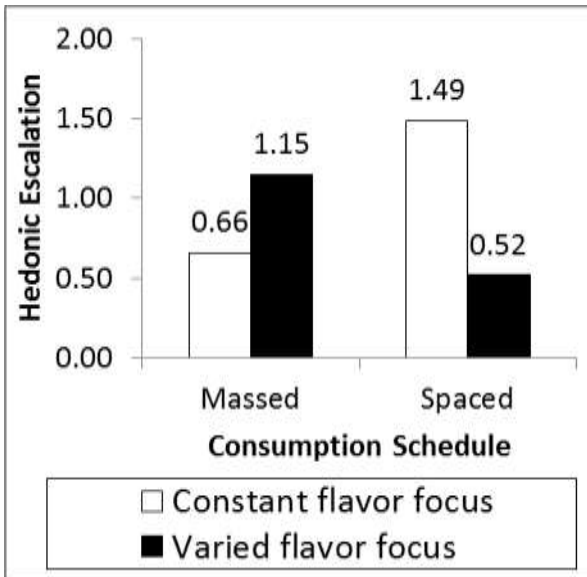
**PILOT STUDY: SENSITIZATION ACROSS REPEATED TASTE EXPERIENCES**



**Study 1**

Study 1 replicates the unfamiliar product condition of the pilot study, but without participants self-selecting into this condition. The study design was a two (flavor focus of each taste experience: constant, varied) by two (consumption schedule: massed, spaced) between-subject design. 142 participants tasted an unfamiliar juice, which was the only change to the procedure from the pilot study. Results showed a flavor focus by consumption schedule interaction ( $F(1, 138) = 11.61, p < .01$ ).

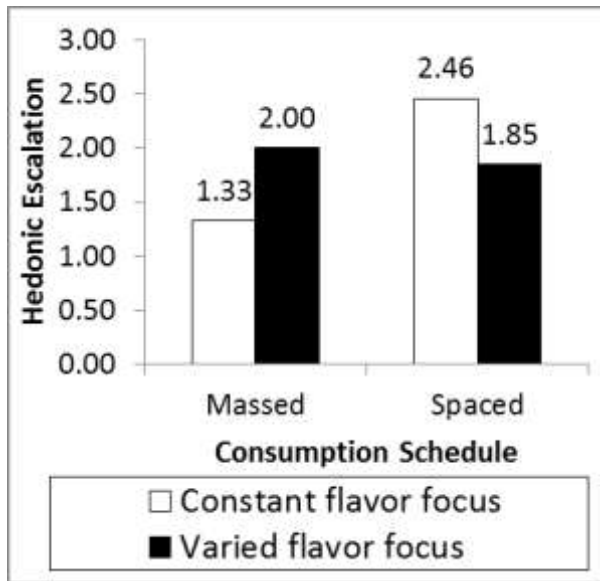
**STUDY 1: THE INFLUENCE OF THE FOCUS AND SPACING ON SENSITIZATION TO AN UNFAMILIAR BEVERAGE**



## Study 2

Study 2 attempts to eliminate procedural biases by modifying the procedure to provide the same flavor dimensions to every participant in the varied condition and replicate prior results with a new food (hummus). Study 2 had the same design as study 1. Results showed a flavor focus by consumption schedule interaction ( $F(1, 152) = 6.16, p < .05$ ).

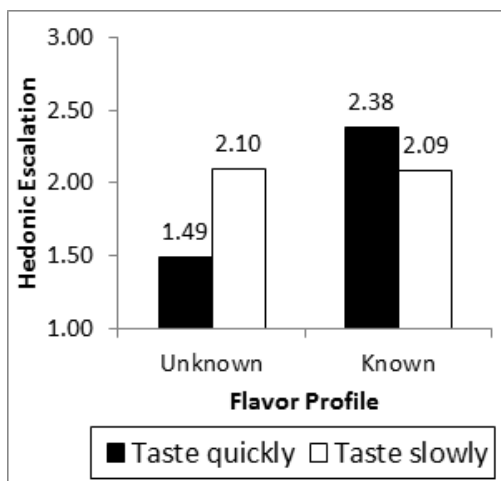
### STUDY 2: THE INFLUENCE OF THE FOCUS AND SPACING ON SENSITIZATION TO AN UNFAMILIAR FOOD



## Study 3

Study 3 shows that people must take the time to extract information from the repeated tasting of unfamiliar foods in order for increased sensitization to occur. The study design was a two (flavor profile: unknown, known) by two (tasting procedure: slow, fast tasting) between-subject design. Results showed a marginally significant knowledge of the flavor dimensions by tasting procedure interaction ( $F(1, 176) = 3.96, p < .05$ ).

### STUDY 3: THE INFLUENCE OF THE KNOWLEDGE OF THE FLAVOR PROFILE RESOURCE AVAILABILITY ON SENSITIZATION





## General Discussion

The results of three studies provide insight into one source of sensitization in food consumption. Sensitization was shown to be a function of a person's ability to build a multi-layered sensory experience across consumption episodes. Sensitization was enhanced when people were encouraged to identify taste dimensions that supported a hedonic experience (study 1 and 2) and given the time to discover taste dimensions that supported a hedonic experience (study 3).

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### ***Number Sharpness in the Communication of Nutritional Information***

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Jiao Zhang, University of Oregon, USA

The communication of nutritional information has become more and more important in recent years, as preventable health conditions relating to poor diet and exercise have continued to rise (Macera, 2010), even though more healthy options are becoming available to consumers. While researchers have addressed such important topics as utilizing technology to provide consumers with nutritional information (Lowe, de Souza-Monteiro, & Fraser 2013), an important question is how consumers process and are influenced by the numerical nutritional information displayed on food packages. For example, a stroll down the grocery aisle shows that both “round” (e.g., 10 g fat) and “sharp” (e.g., 9.5 g fat) numbers are commonly displayed on food packages. While some authors have examined the role of round vs. sharp numbers in prices (Thomas, Simon, & Kadiyali, 2010), researchers have yet to examine whether consumers may process round and sharp numbers differently in the context of nutritional information, and whether consumers' willingness to pay (WTP) and purchase likelihood of food products will be influenced by the use of sharp vs. round numbers in the specification of nutritional information. The present research addresses these questions.

Drawing from previous research showing that sharp numbers are perceived as providing more specific and concrete information (Janiszewski & Uy 2008; Zhang & Schwarz 2013), while round numbers are easy to process and provide more abstract information (Thomas et al., 2010), we propose that when people are more concerned about nutritional ingredients, their desire for precise and concrete information will be stronger, and consequently they will favor sharp numbers over round numbers. In contrast, when people are less concerned about nutritional ingredients, the advantage of round numbers (processing ease) and the disadvantage of sharp numbers (processing difficulty) will stand out; consequently people will be more likely to favor round numbers over sharp numbers. We tested this general proposition in three studies and find consistent support.

Study 1 tested our proposition by examining an individual-difference variable that influences individuals' concern about nutritional information: dieting status. Participants were asked to imagine that they were shopping for canned soup in a supermarket and came upon a brand of canned soup. They were shown a can of “Progresso” soup, on which a banner near the center of the package displayed a piece of nutritional information. We manipulated a) whether the nutritional ingredient was healthy (i.e., grams of protein) or unhealthy (i.e., grams of fat), and b) whether the number was round (10) or sharp (9, 9.5, 10.5, or 11). For the dependent measure, participants were asked to indicate how much they were willing to pay for a can of the soup. At the end of the study, participants were asked to indicate whether or not they were currently on a diet. We reasoned that dieters would be more concerned about nutritional information than would non-dieters. An ANOVA on WTP found a significant dieting x number sharpness two-way interaction (the

four sharp numbers were combined into a single sharp-number condition). The pattern was in accord with our proposition: Dieters indicated significantly higher WTP in the sharp-number condition than in the round-number condition, whereas non-dieters indicated slightly higher WTP in the round-number condition than the sharp-number condition. Ingredient valence did not influence this two-way interaction or have a main effect on WTP. The findings of Study 1 suggest a general tendency of consumers to favor sharp numbers when they are more concerned about nutritional information.

Study 2 extended these findings by examining how positioning a product explicitly as a healthy option moderates this basic pattern. We reasoned that the presence of a “healthy” label would lower dieters’ concern about and decrease their attentiveness to nutritional information, consequently decreasing their preference for sharp numbers. To shed light on the underlying process, we measured participants’ satisfaction with the amount of nutritional information provided. The product was the same as that in Study 1, though only the negative-ingredient condition (fat) was included; we also employed a different set of numbers (round: 10.0; sharp: 9.5, 9.7, 10.3, or 10.5). Half of the participants were told that the soup was part of a health-conscious line of low-fat soups; the other half were not given this information. Results revealed a significant three-way interaction. When the low-fat frame was absent, we found a significant two-way interaction, replicating the results from Study 1. When the low-fat frame was present, however, there were no significant main effects or interactions. Analysis of the satisfaction measure revealed a significant three-way interaction, the pattern of which was similar to that found for WTP. When the low-fat frame was absent, dieters were more satisfied with the amount of nutritional information in the sharp-number condition than in the round-number condition. When the low-fat frame was present, participants indicated higher satisfaction in the round-number condition than in the sharp-number condition.

Study 3 aimed to generalize the findings of Study 2 by examining another individual-difference variable that influences motivation to process nutritional information—objective knowledge about nutrition. We reasoned that more knowledgeable individuals would be more attentive to the quantitative nutritional information on the soup than would less knowledgeable individuals. The design of Study 3 was similar to that of Study 2, except that instead of measuring participants’ dieting status, we measured participants’ nutritional knowledge using the scale from Andrews, Netemeyer, and Burton (2009). To show that our findings generalize to other dependent measures, we used ratings of purchase likelihood as the dependent variable. The results replicated the three-way interaction found in Study 2, such that more (less) knowledgeable participants showed the same pattern of results as the dieters (non-dieters) in Study 2.

Together, these studies show that both the type of product under consideration and consumer characteristics affect how round vs. sharp numbers are evaluated, contributing to our knowledge of numerical processing and the communication of nutritional information. Moreover, due to the increasing importance of nutritional information and the ubiquity of numbers in the marketplace, these results have important implications for both the effective marketing of food products and consumer welfare.

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**BREAK**

**9:30am-9:45am**

**PLENARY SESSION 2: Robert Cialdini, Arizona State University**

**9:45am-10:45am**

**Ballroom**

**BREAK**

**10:45am-11:00am**

**Symposium: Expectancy and Placebo Effects of Marketing Actions****Chair:** Yann Cornil, INSEAD, France***Infectious Counterfeiting: Labeling Products as Fakes can Contaminate Perceived & Actual Efficacy***

Moty Amar, Ono Academic College, Israel\*

Dan Ariely, Duke University, USA

Ziv Carmon, INSEAD, Singapore

Haiyang Yang, Johns Hopkins University, USA

Counterfeiting is a rampant worldwide phenomenon with substantial economic and societal consequences. Whereas macro level consequences have been extensively studied, customer-level consequences of this phenomenon—the focus of this paper—are not well understood. Our research suggests that merely presenting products as counterfeits can contaminate them psychologically. Importantly, this can result in poorer perceptions and lower actual efficacy. Briefly, the notion is that counterfeiting is a moral offense, affecting perceptions & efficacy. This is because the moral offense causes a sense of moral disgust (Schnall et al., 2008), which like physical disgust follows sympathetic magic laws (Greene et al., 2001) of contagion and similarity (Frazer 1890/1959). Labeling a product as counterfeit can thus contaminate both that product and similar non-fake products. The results of three experiments support the predicted effect and its explanation.

The goal of Experiment 1 was to study our ideas in the field. In this experiment, 61 experienced-golf players were presented with 2 identical putters (a golf club used to hit the ball into the last hole) and were told that one of them was real and the other one a fake. They were then asked to determine, to the best of their ability, which putter was real and which a fake. Next, they were randomly placed in one of two experimental conditions: putt with the non-fake club first, or putt with the “fake” club first. Their goal in both conditions was to sink the ball in the hole, or get it as close as possible to the hole if they missed it. As predicted, participants played better with the non-fake club than with the “fake” one. Specifically, participants playing with the non-fake club sunk the ball in the hole more than those who played with the “fake” club (14 times versus 7 times;  $t(59) = -5.89$ ,  $p < .05$ ), and brought it closer to the hole when failing to sink it ( $M=24$  versus  $M=32$ ;  $t(59) = 2.58$ ,  $p < .01$ ).

In Experiment 2, 42 participants were presented with two different Parker fountain pens, and were told that one of them was real and the other a fake. They were asked to use each pen to trace a line from the start of a maze to its end, trying to avoid touching the contours. After completing the task with both pens, participants were asked to evaluate each pen. As predicted, across different measures, pens were rated less favorably when they were said to be fake than when they were said to be non-fake. Specifically, compared to the non-fake pen participants rated the “fake” as significantly less comfortable, of lower quality, and as less appealing. Furthermore, results of the maze task, suggest that deleterious effects of believing that a product is fake may not be limited to participants' reported evaluations, and also affect efficacy. Participants who completed the task using the “fake” pens performed significantly worse than those who used the non-fake pens, touching the lines of the maze more frequently. This effect was, in turn, mediated by participants' attitudes towards using the fake pen, per the procedure recommended by Zhao, Lynch, and Chen (2010).

In experiment 3, we examined whether fake products negatively affect similar non-fake products. Eighty three participants were randomly allocated to one of two conditions. In the first condition, participants were presented with 2 different pairs of Chloe (a

prestigious designer brand) sunglasses and were told that one of them was real and the other a fake. Participants then tried on the sunglasses, examined them, and compared them to another (third) pair of sunglasses that the experimenter presented. In the second condition participants followed same procedure except that they were told that both sunglasses were non-fake. Results show that participants who first saw a “fake” product rated the subsequent non-fake product lower than participants who first saw a non-fake product. Specifically, compared to participants who first had a non-fake pair of sunglasses, those who first had the “fake pair” reported that they saw significantly less well with the non-fake sunglasses, and rated them significantly lower on comfort, perceived quality and liking. Note that the non-fake product being rated more poorly when it was tested after the “fake” product versus when it was tested after a non-fake one, conflicts with prediction of an alternative account whereby differences in ratings are an artifact of participants' tendency to compare the second pair of sunglasses to the first.

Altogether, this paper illustrates harmful effects that counterfeiting can have from consumers' perspective. We show that merely presenting a products as a counterfeit can hurt perceptions and even objective efficacy. Theoretically, this work adds to the emerging research streams on psychological contamination, on marketing effects of disgust, and on placebo effects of marketing actions. Practically, our findings, suggest that counterfeiting may be more damaging than previously believed, due to effects we document, and in particular effects on non-fake versions of the product.

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***Expectancy Effects of Alcohol-Energy Drink Cocktail Labeling on Subjective Intoxication, Risk-Taking, and Sexual Self-Confidence and Aggressiveness***

Yann Cornil, INSEAD, France\*

Pierre Chandon, INSEAD, France

Aradhna Krishna, University of Michigan, USA

More than 50% of American and European college students report consuming alcohol mixed with energy drinks (AMED), raising major public health and safety concerns. The US Food and Drug Administration has argued that mixing energy drinks with alcohol has a causal effect on risky behaviors because the caffeine in these drinks masks the effects of alcohol, decreasing perceived intoxication without actually reducing the effects of intoxication (Ferreira et al. 2006). This concern has prompted the FDA to ban premixed AMEDs in supermarkets in 2010.

In the last two years however, new evidence has emerged refuting the masking hypothesis, the central argument used by the FDA. As summarized in review papers, “there is no consistent evidence that energy drinks alter the perceived level of intoxication” (Verster et al. 2012), and “the underlying mechanisms of action of alcohol–caffeine co-administration remain unknown” (Benson and Scholey 2014).

We argue that the current research on AMED, which has only investigated pharmacological effects in blind experiments, has overlooked psychological effects created by cocktail labeling. Research in consumer behavior has shown that brands or categorization labels can influence perceptions and actual behavior through expectancy (or placebo) effects (Ariely and Norton 2009; Irmak et al. 2011; Plassmann et al. 2008). Two studies have focused on the expectancy effects of energy drinks. Shiv et al. (2005) have shown that people solve more puzzles after drinking energy drinks believed to increase mental alertness. Brasel and Gips (2011) have shown that mere exposure to the Red Bull brand increased aggressive driving in video games. However, no research has, to date, examined

whether AMED consumption can influence perceived intoxication and harmful behavioral responses through expectancy effects shaped by cocktail labeling.

We hypothesize that highlighting that a cocktail contains vodka and Red Bull (vs. vodka alone and vs. soft drinks) *increases* perceived intoxication through expectancy effects. This sharply contrasts with the FDA's masking hypothesis that energy drinks *decrease* perceived intoxication through pharmacological effects. We argue that this happens because people generally believe that AMED consumption is more (rather than less) intoxicating than alcohol consumption alone (Marczinski et al. 2011; Peacock et al. 2013). We also hypothesize that higher perceived intoxication increases behaviors which are culturally associated with alcohol intoxication (MacAndrew and Edgerton 1969), such as sexual self-confidence and aggressiveness and general risk-taking. Conversely, we hypothesize that it also makes people compensate for the anticipated decrease in motor or cognitive capacities associated with alcohol intoxication (Testa et al. 2006) and makes them take less risks in domains where risk-taking can be dangerous, such as driving.

We recruited 154 male heterosexual participants in Paris, France (Mean age=22.3), with no alcohol use disorders. Participants were asked to drink the same cocktail containing 6cl of 40% Vodka (two standard drinks), 8cl of Red Bull and 16cl of a mix of exotic fruits for a target blood alcohol concentration (BAC) of 0.045g/dL. Depending on the experimental condition, participants were told it was a "vodka-Red Bull cocktail," a "vodka cocktail," or an "exotic fruit cocktail".

We administered the Balloon Analogue Risk Task (BART) (Lejuez et al. 2002), a measure of general risk taking in which participants pump a virtual balloon to earn money while increasing the risk of losing money if the balloon explodes. We next measured sexual self-confidence by showing photos of attractive women and asking participants how likely they would chat these women up, and how likely it was that women would accept their advances. Then, we measured sexual aggressiveness with a validated scale (Ariely and Loewenstein 2006). We also asked participants how long they would wait before driving across different scenarios. Then, we measured perceived intoxication with a questionnaire, and actual intoxication with an electronic Breathalyzer. Before releasing participants (when their actual intoxication reached a low point), we measured participants' beliefs that energy drinks increase or decrease alcohol intoxication.

As predicted, compared with the "exotic fruit" condition, the "vodka-Red Bull" label had no effect on actual intoxication ( $p>.9$ ) but significantly increased perceived intoxication ( $p=.01$ ), general risk-taking ( $p=.02$ ), sexual self-confidence ( $p=.02$ ) and sexual aggressiveness ( $p=.04$ ), and decreased driving risk ( $p<.01$ ). Results in the "vodka" condition fell between the "exotic fruit" and the "vodka-Red Bull" condition, and the differences with either of the two conditions were nonsignificant, suggesting that a label simply emphasizing the presence of alcohol (vs. AMED) does not reliably influence perceived intoxication and behavioral responses.

To rule out mere priming effects of exposure to the Red Bull brand or Vodka label (Brasel and Gips 2011), we tested a moderated mediation model, which showed that perceived intoxication fully mediated the effect of "vodka-Red Bull" label on behavioral responses, and that this mediation was conditional upon people's beliefs in the intoxicating effect of AMED consumption (i.e. the mediating effect of perceived intoxication significantly increased when participants more strongly believed that AMEDs increase intoxication compared with alcohol only).

To conclude, while past research has investigated the non-pharmacological effects of energy drinks consumption (Shiv et al. 2005) or of alcohol consumption (Hull and Bond 1986), our research is the first to examine whether and how AMED consumption influences perceived intoxication and harmful behavior through expectancy. Our findings also suggest that it is important to distinguish between different risky behaviors, such as driving risk and sexual aggressiveness—which have often been bundled together. From a policy perspective, this research contributes to the current debate about the public health impact of mixing alcohol with energy drinks. Our

results support the need for public authorities to regulate the branding and advertising of AMED drinks, based on psychological rather than pharmacological mechanisms.

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### ***The Taste of a Bad Deal: The Effect of Transactional Utility on Experiential Utility***

Jayson Jia, Hong Kong University, Hong Kong\*

Taly Reich, Yale University, USA

Baba Shiv, Stanford University, USA

Can getting a bad deal on a bar of chocolate make the chocolate taste worse? Can accidentally paying twice when buying music online make a song sound worse? Our findings suggest “yes” on both accounts. This paper explores the notion that transactional utility, or enjoyment derived from the transaction or acquisition phase prior to actual consumption, can directly affect how much hedonic utility is derived from the consumption experience itself. This phenomenon is intuited by research from the past decade showing that pre-experiential factors (i.e., factors that affect consumers before consumption occurs) such as price cues can change experiences’ hedonic and neurological reward values (e.g., Plassman et al. 2007; McClure et al. 2004; Shiv, Carmon, & Ariely 2005; Tsai & Lee 2013). For example, wines with a higher price tag can trigger greater activation of reward centers of the brain (Plassman et al. 2007); the same energy drink with a higher price tag can also improve cognitive performance in puzzle solving tasks (Shiv et al. 2005). The cognitive science behind such ‘mind over body’ effects stems from variations of the placebo effect, which relates to how our biology responds to cognitive expectations which go on to distort experiences (Shiv et al. 2005).

Whereas most previous research on marketing placebo effects has examined how factors such as price can influence expectations (e.g., price signals quality), which then affects the reward value of experiences, we explored the pure carry-over impact of transaction utility independent of such factors. In a similar vein, Tsai and Lee (2013) have shown that price promotions and getting a discount can influence post-purchase hedonic consumption experience via the improvement of mood, reduction of pain of payment, and change in consumption approach. Although price-discounts are one possible means of *increasing* transaction utility, the full extent of transaction utility’s relationship with experiential utility remains relatively unexplored. This paper, which tests the impact of *decreased* transaction utility, investigates the general effect of transaction utility on experiential utility by exploring how perceived goodness-of-deal affects motivational factors such as *wanting* which then affect the *liking* of consumer experiences (Berridge and Robinson 1998).

The challenge of this research and our experimental design was to find ways of manipulating transactional utility while keeping final price and perceived value of the products constant. Experiment 1 served as an initial exploration of the basic effect and explored how an incidental decrease in transactional utility that was independent of the product itself could affect experiential utility. In an online shopping simulation, participants (N = 90) were double-charged for the purchase of a music video in the treatment condition (and charged once in the control condition). These participants felt that the song’s listed price (\$2.99 in both conditions) was more expensive and reported lower transactional utility from their purchase,  $p$ ’s < .05. They subsequently reported (marginally) lower wanting and motivation to listen to the song,  $p = .07$  and less enjoyment during the actual listening experience  $p = .09$ .

Experiment 2 extended the findings to a wider range of products (chocolate chip cookies, dessert biscuits, and orange juice) in an in-lab shopping simulation that involved physical transactions (paying with tokens). All participants (N = 130) were endowed with both high quality tokens and low quality tokens which were ostensibly worth \$1 (participants were endowed with both to induce

relative value for the money). By random assignment, participants were asked to spend either the high quality or low quality chips. Although the monetary values of the chips were equal (prices and other quality cues were also the same), the apparent disparity in quality of chips made it more painful to give up the higher quality tokens (higher quality tokens were more valued,  $p < .05$ , and spending them reduced transactional utility  $p < .05$ , although perceived objective costliness was no different,  $p > .1$ ). This manipulation was akin to asking participants to spend an old, crumpled bill or a new, crisp bill. When tasting foods, participants who gave up the nicer token (lower transaction utility) reported reduced relative desire (wanting) for the foods, lower experiential utility, and less desire for repeat consumption or future purchases ( $p$ 's  $< .05$ ). Furthermore, we found that the overall relationship between transaction utility and experiential utility for all three products was mediated by wanting for the products (Sobel = 5.55,  $p < .01$ ). In other words, lower transaction utility reduced the relative desire for the products, which then reduced how much they were enjoyed.

Experiment 3 explored the mechanism of reduced wanting and tested a latitude of acceptance model of utility whereby lower transaction utility increased the 'standards' of taste (captured by a disjointed, piecewise utility function) – consumption experiences that were above that standard were unaffected by the increased scrutiny, while consumption experiences that were below the standard were negatively affected. Employing the same basic experimental paradigm as Experiment 2, we also randomized low (Hershey's) versus high quality (Ghiradelli's) branded chocolate. In the low transaction utility condition, participants liked the Hershey's chocolate less, were less interested in eating more, and less interested in future purchases ( $p$ 's  $< .05$ ). However, there were no differences in ratings of liking, desire, or future interest for the Ghiradelli chocolate. The results supported a latitude of acceptance model (driven by differences in scrutiny at different thresholds) that is consistent with both the product quality moderation found in Plassman et al. (2007) and involvement mechanism intuited by Tsai and Lee (2013). Overall, our findings not only contribute to the understanding of how placebo effects operate in marketing and the downstream effects of pricing on consumer behavior, but also reveal intuitions on the basic understanding of reward and how cognitive and affective motivational forces can interact to change the processing of reward value.

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### ***Individual Differences in Marketing Placebo Effects: Evidence from Brain Imaging and Behavioral Experiments***

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Recent research has studied whether marketing-based expectancies such as price quality beliefs influence the consumption experience and subsequent behavior, but almost no research has examined individual differences in "marketing placebo effects" (MPE, see Plassmann & Wager 2014 for a review). In this paper, we suggest three moderators of MPE based on previous findings from the neuroscientific literature investigating traditional pain placebo effects. These are (1) dopaminergic processing linked to reward-seeking, (2) prefrontal activity linked to cognitive regulation and appraisal of emotional states and experiences (i.e., a top-down cognitive processing), and (3) attention to or away from somatosensory experiences encoded in somatosensory brain areas (i.e., a bottom-up somatosensory processing linked to processing in the posterior insula and somatosensory cortices).

We tested in this paper whether individual differences in these three processes moderated MPE with a variety of different MPEs (price, brand labels, health claims) and sensory experiences (food and aesthetic consumption) following a two-step procedure: In the first step, we tested the neural predictions of our model using a structural imaging approach from neuroscience to study individual trait-related differences (study 1).

More specifically, we used automated structural Magnetic Resonance Imaging analysis to detect whether differences in gray matter volume (GMV, Ashburner & Friston 2000) can be linked to individual differences in MPE (N = 90). We found that the size of GMV in the ventral and dorsal striatum ( $b_{\text{striatum}} = 2.38$ ,  $SE_{\text{striatum}} = 0.9$ ,  $p < .01$ ), the dorsal medial pre-frontal cortex (dmPFC,  $b_{\text{dmPFC}} = 5.35$ ,  $SE_{\text{dmPFC}} = 1.55$ ,  $p < .001$ ) and the posterior insula ( $b_{\text{posIns}} = -10.55$ ,  $SE_{\text{posIns}} = 3.58$ ,  $p < .005$ ) moderated the expectancy effects of price (high vs. low) and health claims (healthy vs. regular) on the experienced taste pleasantness for wine and milkshakes.

In a second step, we relied on existing evidence linking each of these brain areas with personality traits (i.e., the striatum with reward-seeking, the posterior insula with somatosensory awareness, and the dorsal medial prefrontal cortex with need for cognition) to further test the implications of our model for how personality traits moderate the placebo effects of price in behavioral experiments of wine tasting (studies 2a, 2b, and 2c) applying a similar design as done by Plassmann et al. 2008.

In study 2a (N = 88), we investigated whether reward sensitivity, measured using the reward-seeking subscale of the behavioral activation scale (BAS), predicts MPE and found that the BAS subscale scores amplified the effect of price on experienced utility ratings ( $T(1, 87) = 2.98$ ,  $p = .004$ ). In study 2b (N = 85), we investigated whether somatosensory awareness, measured using the private body consciousness subscale of the Body Consciousness Questionnaire (Miller, Murphy, and Buss 1981), predicts MPE and indeed found that somatosensory awareness moderated MPE ( $T(1, 84) = -2.83$ ,  $p = .006$ ). In study 2c (N = 78), we investigated whether a consumer's need to focus on cognitive cues might play an important role for MPE using the Need for Cognition Scale (Cacioppo, Petty, and Kao 1984). We found that the NFC scores in line with our hypothesis amplified the effect of price on experienced utility ratings ( $T(1, 78) = 2.40$ ,  $p = .019$ ).

Taken together, studies 2a, 2b, and 2c provided further evidence that participants high in reward-seeking and high in need for cognitive processing were more responsive to MPE, whereas subjects high in somatosensory awareness were less responsive to MPE.

In the last study, we tested the robustness and generalizability of our effects by studying whether reward responsiveness, somatosensory awareness, and need for cognition also jointly moderate the effects of the perceived expertise of artists (known artist vs. the experimenter, taken from Kirk et al. 2008) on subjective aesthetic experiences (study 3, N = 492). We found that the BAS ( $T(1, 491) = 6.53$ ,  $p < .001$ ) and NFC ( $T(1, 491) = 2.44$ ,  $p = .015$ ) scores indeed amplified expectancy effects on experienced utility ratings, whereas PBC moderated expectancy effects on experienced utility ratings ( $T(1, 491) = -2.75$ ,  $p = .006$ ).

To conclude, in this paper we investigated individual differences in MPE. We found converging evidence using different methodologies (brain imaging and behavioral experiments) that for a variety of marketing-based expectancies (process, brand labels, and health claims) and different sensory consumption experiences (food and art) consumers high in reward-seeking and high in need for cognitive processing were more responsive to MPE, whereas subjects high in somatosensory awareness were less responsive to MPE. Understanding individual differences of marketing placebo effects is important for marketing researchers, public policy makers, and practitioners alike.

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## ***Symposium: When Do We Want a Partner in Crime?***

**Chair:** Stephanie Lin, Stanford University, USA



## *The ‘Partners-in-Crime’ and the ‘Lone Wolf’: Comparing the Unethical Behaviors of Dyads and Individuals*

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Recognizing the widespread occurrence of fraudulent behaviors and their costs to society, researchers have examined individual and situational factors underlying individuals’ unethical behavior (Gino et al. 2013). However, people often solve ethical dilemmas along with others. For example, Enron’s fraud was committed jointly by CEO Jeffrey Skilling and founder Kenneth Lay. Furthermore, people on sports teams, in the workplace, or in academic settings often make joint ethical decisions.

Despite the prevalence of such decisions, little research has examined whether people are more unethical when they make decisions jointly in a dyad versus alone. The present research takes a first step toward addressing this gap in the literature, comparing the ethical decisions of dyads and individuals.

Interestingly, the existing literature makes opposing predictions about whether being in a pair will increase or decrease unethical behavior. On one hand, the accountability literature suggests that “the need to justify one’s views to others” encourages more careful and accurate decisions (Tetlock 1983, 1987). As such, it could be argued that decision-making in dyads will be more ethical than solo decision-making. However, research on diffusion of responsibility shows that individuals feel less personal responsibility for group actions (Leary and Forsyth 1987), predicting that dyadic decision-making will be more unethical than that of the ‘lone wolf.’ Further, shared risk-taking and guilt-sharing can provide bonding experiences (Lowe & Haws, 2014). Thus, it is possible that individuals wishing to form social bonds with others could see the opportunity to make joint unethical decisions as an avenue to closeness. In such cases, the ‘partners-in-crime’ should display more unethical decision-making than should the ‘lone wolf.’

To test these possibilities, our first study presented participants ( $n=62$ ) with two versions of a cheating scenario (Shu et al. 2011). In Scenario A participants imagined that a student had the opportunity to cheat by taking a graded exam from classmates. In Scenario B participants imagined that the same decision was made by a pair of students. Participants predicted who would be more likely to cheat (“1=the individual student” and “7=the pair of students”). Next, participants imagined that the two students in Scenario B cheated together and answered questions regarding the social consequences of such collaborative wrongdoing. Results revealed that people intuit that the pair of students will be more likely to cheat than the individual ( $M=4.69$  vs. 4 (midpoint),  $t(61)=2.52, p=.01$ ). Moreover, people anticipate that two cheating students will feel more connected, less distant, and like each other more ( $p's < .02$ ) after “partnering-in-crime.”

Based on these findings, we anticipated that dyads may use joint unethical decisions to create social bonding. Four studies test this idea.

In Study 2A, we recruited undergraduate students from the university community. Here, we anticipated a low likelihood that dyad members would know each other, thus allowing for the possibility of the desire to socially bond. Also, participants completed the Trait Self-Control Scale online at the time of sign-up, as we expected that low and high self-control people might view vicious behaviors such as joint “crimes” differently and thus experience different social bonding consequences. When participants came to the lab, they were assigned to either individual or dyadic conditions and given the same ethical decision as in Study 1.

Then participants in the dyads answered questions designed to measure social bonding (same as in Study 1) and the extent to which they knew each other. Manipulation check results confirmed that dyad members did not know each other well ( $M=1.32$  vs. 4,  $p < .0001$ ).

In this context, results showed that dyads ( $M=5.14$ ) were *more* likely to cheat than individuals ( $M=4.47, F(1,133)=5.48, p=.02$ ). Finally, results highlighted that the likelihood of cheating had a weak positive impact on social bonding - but only for low self-control individuals ( $b=.11, p=.07$ ). Higher likelihood of cheating in fact had a negative effect for high self-control individuals ( $b=-.20, p=.02$ ). Study 2B replicates these findings using different unethical decisions (likelihood to report an undercharge mistake in a restaurant and likelihood to engage in different consumer fraudulent behaviors).

In Study 3, participants ( $n=111$ ) were MBA students. In addition to sharing a cohort and having worked together on projects in prior semesters, they completed this experiment at approximately the midpoint in a 14-week semester. As such, they were already part of a fairly tight-knit group and would not need to use unethical behaviors to bond socially. In this context, we anticipated that dyads would be more ethical than individuals. Participants had to decide – either alone or jointly with a partner - how likely they were to take on additional investors in their business despite the limited profit potential (Wiltermuth 2011). Results suggested that when people already knew each other quite well, dyads ( $M=2.21$ ) were less unethical than the individuals ( $M=3.22; F(1,67)=5.33, p=.02$ ).

Study 4 provided evidence of the mechanism. We anticipated that the unethical behaviors of dyads should be exacerbated under conditions of social exclusion, when social affiliation needs are more salient. We recruited students ( $n=67$ ) and created virtual dyads in which one partner's behavior was kept constant. Participants were assigned either to social exclusion or control condition, where they had to write a short essay about an instance when they felt socially excluded or about their day yesterday respectively. Participants then imagined that after watching a movie for class project in a local theater, a classmate (whom they do not know well) suggested that they “hop” movies without buying tickets. Participants indicated whether they will “hop” movies with their classmate and the number of movies they would “hop.” Participants in the social exclusion condition were more likely to “hop” movies ( $b=1.07, \exp(b)=2.89, \text{Wald } \chi^2(1) = 3.65, p = .06$ ) and were willing to “hop” more movies ( $b=.84, \text{Wald } \chi^2(1)=4.75, p = .03$ ) than those in the control condition. This study suggests the needs for social affiliation, which are exacerbated by social exclusion experiences, underlie the greater unethical behaviors of dyads than individuals.

Our next studies will manipulate the need for social bonding in a dyad by creating either a close or distant relationship between the dyads members (using the Relationship Closeness Induction Task) and will seek to replicate our findings using real ethical decisions.

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### ***(Im)moral Support: The Social Outcomes of Parallel Self-Control Decision***

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Though most consumer self-control decisions are made individually, they are rarely made in isolation. Temptations are often simultaneously encountered by multiple members of a group or dyad and thereby susceptible to social influence and impactful on social relationships. Current wisdom suggests that consumers exhibiting high levels of self-control experience greater social acceptance for a number of reasons. For example, these individuals are more likely to display pro-social behavior (DeWall, Baumeister and Vohs 2008), appear trustworthy (Righetti and Finkenauer 2011), and self-monitor more effectively (Finkel et al. 2006). It has even been suggested that self-control exists for the very purpose of facilitating group membership (Baumeister, Schmeichel and Vohs 2007). However, despite the fact that many decisions are made along with other individuals, little is known about these “parallel” self-control decisions or the resulting social consequences.

In a series of studies spanning several domains, consumers demonstrate a tendency to bond over matched self-control decisions through “co-indulgence” (CI) or “co-abstinence” (CA). The perceived severity of choosing vice over virtue influences when each of these matched outcomes produces greater affiliation. When indulgence threatens to seriously hinder goal progress, consumers bond through moral support evidenced by joint abstention. When the consequences are perceived as relatively less severe, consumers find friendship through partnering in crime by both indulging. Throughout, guilt underlies the relationship between self-control behaviors and social outcomes as peer compliance reduces guilt and thus improves affiliation.

#### Studies 1a and 1b

Studies 1a and 1b involve hypothetical consumption scenarios examining only matched decisions (co-indulgence or co-abstinence) across high and low severity conditions. Participants in both studies indicated how the event would impact their feelings of affiliation with their friend and how guilty they would feel about their decision.

In study 1a, 172 undergraduate students were provided with a hypothetical scenario about going on a shopping trip with a friend and encountering a tempting item that was either relatively expensive or relatively inexpensive. Study 1b involved 208 undergraduate students making a health-related consumption decision with a friend after learning that they were in relatively good or relatively poor health.

In study 1a, an ANOVA revealed a significant interaction ( $F(1,169)=7.79, p<.01$ ) such that co-indulgence resulted in higher feelings of affiliation when the severity of skipping class was low ( $M_{CI}=4.78, M_{CA}=4.38$ ), while the opposite was true when the severity was high ( $M_{CI}=4.39, M_{CA}=4.74$ ). Experienced guilt significantly mediated the relationship between the interaction variable (co-indulgence vs. co-abstinence and cheap vs. expensive) and affiliation ( $a_1 \times b_1 = -.224, 95\% \text{ C.I.} = -.500 \text{ to } -.075, p<.05$ ).

Study 1b also resulted in a significant interaction ( $F(1, 196) = 11.40, p<.001$ ), consistent with study 1a. Co-indulgence resulted in higher affiliation in the low-severity (good health) condition ( $F(1, 193) = 4.02, p<.05$ ), and co-abstinence resulted in higher affiliation in the high-severity condition ( $M_{CA-LowSeverity}=4.09, M_{CA-HighSeverity}=4.94; F(1,193)=7.72, p<.01$ ). Consistent with study 1a, guilt again mediated the relationship between affiliation and the interaction of parallel self-control decision (co-indulge vs. co-abstain) and severity (healthy vs. unhealthy;  $a_1 \times b_1 = -.67, 95\% \text{ C.I.} = -1.09 \text{ to } -.37, p<.05$ ). Guilt incurred diminishes the social benefit of co-indulgence, while guilt avoided improves the affiliation resulting from co-abstinence.

#### Study 2

Study 2 examined the full dyadic framework with 322 undergraduate students participating in exchange for course credit. Participants imagined deciding with a roommate whether or not to attend class early one morning. In the high severity condition, the consequences of skipping class were rather negative while in the low severity condition they were more benign. Participants imagined either deciding to skip class or deciding to attend while their roommates either matched their behavior or did not.

Following these manipulations, participants indicated the impact this scenario would have on their feelings of affiliation with their roommate as well as the level of guilt they expected to experience. These responses were collected using the same measures as in studies 1a and 1b, such that higher scores indicate greater increases in affiliation and higher levels of guilt, respectively.

An ANOVA resulted in a significant three-way interaction ( $F(1, 318) = 8.78, p<.01$ ), such that in the low severity condition co-indulgence resulted in the highest affiliation, while in the high severity condition co-abstinence led to the most bonding between

actors. Guilt mediated the effect of the full three-way interaction (severity, participant choice and peer choice) on affiliation ( $a_1 \times b_2 = -.62$ , 95% C.I. =  $-1.12$  to  $-.12$ ,  $p < .05$ ).

### Study 3

Study 3 was a real behavior study using dyads. Participants, who were paired randomly (matched on gender), were asked to watch a video together. In the room was a bowl of candy, ostensibly just to say thanks for participating. Via hidden camera, participants were observed and their behavior was recorded, including whether they ate, who ate first, and the quantity eaten. In this way, dyads naturally sorted themselves into the conditions used for analysis. After the video concluded, participants returned to computer stations where they completed a questionnaire about the film. Participants were then asked several measures regarding their impressions of their study partners as well as their guilt over their candy-related behavior.

Participants who indulged consumed an average of 2.25 candies each with a standard deviation of 1.69 (Min=1, Max=9). Matched decisions were the dominant outcome, with 31 dyads co-abstaining, 23 dyads co-indulging, and 15 mixed-decision dyads.

An Actor-Partner-Interdependence-Model (APIM) regression revealed a marginally significant main effect of peer quantity ( $\beta = 0.151$ ,  $t = 1.97$ ,  $p = .051$ ), a non-significant main effect of participant quantity ( $\beta = 0.09$ ,  $t = 1.24$ ,  $p > .10$ ), and a significant interaction of participant quantity and peer quantity ( $\beta = -0.06$ ,  $t = -2.19$ ,  $p < .05$ ). Consistent with previous studies, co-indulgence produced more affiliation when severity (quantity) was relatively low, but less affiliation as the quantity increased. This primary effect supports the results involving severity from previous studies.

The aforementioned interaction between participant quantity and peer quantity on affiliation is mediated by feelings of guilt ( $a_1 \times b_1 = -.009$ , 95% C.I. =  $-.024$  to  $-.001$ ,  $p < .05$ ), a real behavior result consistent with the previous studies.

### Discussion

Through 4 studies, we find that consumers bond through moral support when the stakes are high, and through partnering-in-crime when the stakes are low.

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### ***Have Your Cake (and Make Her Eat Two): Creating Localized Descriptive Norms to Justify Indulgence***

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Because indulging often violates personal standards of behavior (Dahl, Honea, & Manchanda, 2003), people have a variety of ways to justify their actions. They can “earn” indulgence through working hard, exhibiting self-control, or behaving virtuously (Khan & Dhar, 2006; Kivetz & Zheng, 2006; Xu & Schwarz, 2009). If indulgence has not been “earned,” people can still justify indulgence by anticipating future self-control (Khan & Dhar, 2007) or exaggerating the sinfulness of foregone options (Effron, Monin, & Miller, 2013). We posit that people also manipulate social norms by facilitating indulgence in others to justify their indulgence.

Behaviors that are descriptively common are perceived as more normatively acceptable (Cialdini, Reno, & Kallgren, 1990; Lapinski & Rimal, 2005), and therefore people use norms to infer what appropriate behavior is, especially in ambiguous situations. When others around them eat or drink relatively large amounts, or choose more unhealthy foods, people are likely to follow suit because it seems more normative and appropriate (Burger et al., 2010; Herman et al., 2003; Prentice & Miller, 1993). People also use social norms to reduce guilt and justify unethical or otherwise “wrong” behavior. For small indulgences, people feel less guilty if another person indulges with them than if they indulge and the other person abstains (Lowe & Haws, 2014). Furthermore, people are more likely to cheat when they witness an in-group member cheat first because they perceive it to be the descriptive norm (Gino et al., 2009).

Prior research has therefore shown that local norms influence indulgence. In this set of studies, we test whether people will actively shape norms by facilitating indulgence in others. We hypothesize that people facilitate indulgence in others to make their own indulgence more normatively acceptable. Our hypotheses are summarized below:

**H1:** When people have chosen to engage in indulgent activities, they encourage others to participate indulge as well to make themselves feel that their own indulgent choice was acceptable.

**H2:** People facilitate indulgence in others when faced with tempting indulgent options in order to allow themselves to indulge.

We first tested whether people would be more likely to encourage others to participate in highly indulgent (vs. less indulgent) activities with them. Participants (100 MTurk) rated how fun and indulgent 40 activities were (e.g. going to the spa, eating a slice of cake, eating a salad, buying groceries), and how likely they were to encourage their friends to engage in those activities with them. A regression controlling for fixed-effects revealed that an activity’s indulgence ratings predicted how likely people were to encourage friends to participate in those activities, controlling for how fun the activity was,  $t(3966) = 3.85, p = .0001$ . This study suggests that, when people indulge, they are likely to encourage others to indulge, regardless of how fun the activity is.

Study 2 provided mechanistic evidence as to why people encourage indulgence in others when they have chosen to indulge. As indulgence is characterized as violating long-term goals for short-term hedonic gains, we expected that for a single activity (eating chocolate cake), those for whom the activity violated a personal goal (dieters) would encourage others to engage in the behavior with them to make themselves feel better about their choice, whereas those for whom the act did not violate a goal (non-dieters) would not be particularly likely to encourage indulgence. Participants (209 female Survey Monkey panel members) read that they had ordered chocolate cake, and that their friend was debating between a fruit salad and cake. They indicated which item they preferred their friend to order and would encourage their friend to order. They were then told that their friend ordered either fruit or cake, and asked how relieved, glad, happy, and resentful they were. Dieters (vs. non-dieters) showed a greater preference for their friend to order cake  $t(204) = -4.00, p < .001$ , and were more likely to encourage their friends to order cake,  $t(204) = -1.99, p = .048$ . When asked why they encouraged the item that they did in free-response form, dieters more frequently mentioned wanting to feel better about their own choice  $t(204) = -1.97, p = .049$ . Finally, dieters felt gladder and more relieved when their friend ordered cake than when their friend ordered fruit, whereas non-dieters did not (gladness interaction  $t(201) = 2.07, p = .04$ ; relief interaction  $t(201) = 2.88, p = .004$ ). This study provides evidence that indulgers encourage others to engage in the same behaviors to make themselves feel better about their indulgent choices, and that they reap benefits from their friends’ indulgence (here, relief and gladness).

We conducted Study 3 to test H2. Participants (295 MTurk) read that they were choosing between getting lemonade or a beer (indulgent)/fruit soda (non-indulgent) with their lunch. Additionally, they read that they were still trying to decide (conflicted), or that they had already decided on lemonade (non-conflicted). They were told that their friend was making that same choice and asked which they would encourage their friend to order. Among those in the indulgence condition (lemonade vs. beer), those who were conflicted were more likely to encourage the friend to order beer than those who had decided on lemonade,  $t(191) = -2.41, p = .017$ .

However, feeling conflicted did not affect what beverage they encouraged in the non-indulgent condition (lemonade vs. fruit soda),  $t(191) = 1.07, p = .28$ , interaction  $t(191) = 2.47, p = .015$ . Self-coded free responses indicated that, when conflicted, those in the indulgent condition were more likely to encourage the beverage that they did ‘so they could also have that beverage’ (28.57%) than those in the non-indulgent condition (2.00%),  $B = -.28, SE = 1.06, p = .005$ .

As next steps, we aim to test a third hypothesis that, when given the opportunity to facilitate indulgence in others, people will indulge more than they otherwise would have. For instance, people may have two scoops of ice cream instead of one if they were first able to serve 3 scoops to a friend.

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## ***Individual Papers: Consumer Processing of Attribute Information***

### ***For a Thumbs Up, Place the Smaller Number Down: How Differences in Vertical Location Affect Attribute Evaluations***

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### **Introduction and Theory**

When selling food products, comparative numerical information (like calorie levels) is often presented vertically (see Panera Bread menu, below), with focal item calorie information presented either above or below information for a referent item. In these instances, diet-conscious consumers compare two (calorie) numbers that indicate different levels, and the context is such that the smaller number (i.e., fewer calories) may be more attractive (i.e. “less-is-better” context). Are consumers’ “calorie gap” perceptions contingent on whether the smaller number appears above versus below the larger number, and do such perceptions feed forward into holistic evaluations? In this paper, we examine the above questions.



Drawing from work in both consumer behavior and numeric cognition, and focusing on less-is-better contexts, we bring together elements from both the subtraction principle (Biswas, Bhowmick, Guha and Grewal 2013) and the operational momentum effect (Knops, Viarouge, and Dehaene 2009; McCrink, Dehaene, and Dehaene-Lambertz 2007; Pinhas and Fischer 2008), and articulate how consumers process and evaluate two numeric elements when one element is presented above the other. Building on the subtraction principle, we predict that consumers find it difficult to perform a subtraction task and calculate the difference in numeric attribute information, when the smaller value attribute appears *above* the larger value. In turn, this increased difficulty makes it more likely that consumers approximate (not calculate) the calorie difference. Then, using insights from the operational momentum effect, we posit that when consumers make subtraction-related approximations, they underestimate such approximations, affecting perceptions of attribute-gap and (in turn) holistic evaluations. Thus, in “less-is-better” contexts, if a focal product with a lower value attribute appears above (vs. below) a comparison product, consumers express:

*H<sub>1</sub>: Relatively lower perceptions of the attribute “difference gap”.*

*H<sub>2</sub>: Relatively lower holistic preferences for the focal product.*

## **Study 1**

*Methods.* Participants ( $N=433$  mTurk participants) were told that they were being careful and watching their diet. Participants were then shown two sandwiches (R and H), depicted by pictures and a blurb indicating brief descriptions and calorie levels. R (the focal sandwich) was a newly introduced sandwich, *with lower calorie levels*. H was the regular sandwich, providing good nutrition. Thus, the focal sandwich R was superior on the less-is-better attribute, but relatively unknown.

There were eight conditions, reflecting a 2(focal sandwich presentation: above vs. below) x 4(various calorie combinations, with focal sandwich R always having fewer calories – R-218 vs. H-293; R-246 vs. H-331; R-393 vs. H-530; R-629 vs. H-848). Participants provided relative preferences between the two sandwiches (1 = very low relative preference, 7 = very strong relative preference for the focal sandwich H). *A lower number thus reflects increased preference for the focal sandwich R*. Second, participants provided estimates of perceived “calorie gap” between the two sandwiches (1 = very small difference, 7 = very large difference).

*Results.* An ANOVA for both relative preferences and the calorie gap indicated insignificant main effect of calorie combinations ( $F(3,425) < 1.9=83, p > .1$ ), significant main effect of focal sandwich presentation ( $F(1,425) > 22.78, p < .01$ ), and insignificant interaction effects ( $F(3,425) < 1$ ). When the focal sandwich R was below (vs. above), relative preference for focal sandwich was significantly higher, with  $M_s$  3.67, 3.65, 3.42, and 3.07 vs.  $M_s$  4.44, 4.38, 4.23, and 4.07 (all cases,  $t(425) > 2.04, p_s < .05$ ). Further, perceptions of calorie differences were significantly higher when the focal sandwich R was below (vs. above), with  $M_s$  4.13, 4.11, 4.23, and 4.36 vs.  $M_s$  3.31, 3.40, 3.60, and 3.76 (all cases,  $t(425) > 2.48, p_s < .05$ ). Finally, we tested for mediation (Zhao, Lynch and Chen 2010). As expected, differences in calorie-gap perceptions mediated differences in relative preference (95% bootstrap intervals for the mediated effect did not include zero). The above results were consistent with both H1 and H2, and suggest that the effects sustain at various levels of the less-is-better attribute.

*Follow-up study.* We replicated the above results in another domain (choice between soup cans), using a different mediator attribute (sodium levels, also a “less-is-better attribute”).

## **Study 2**

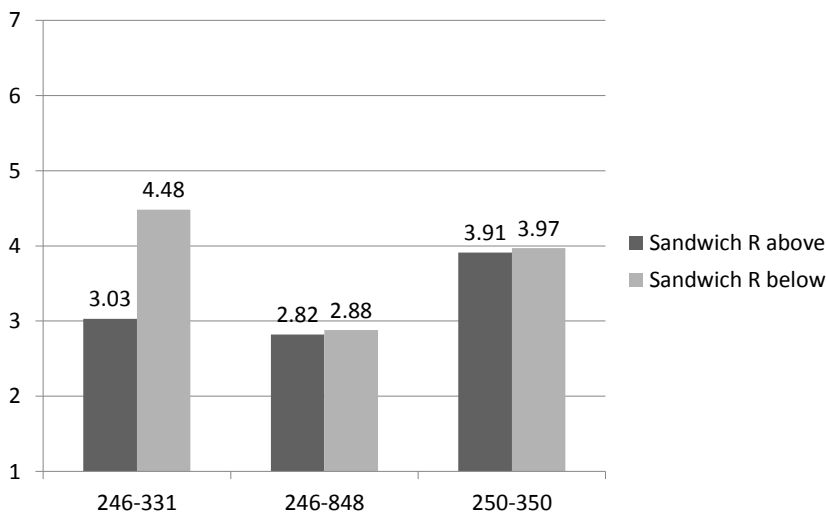
*Methods.* Participants ( $N = 198$  mTurk participants) were given a scenario similar to Study 1, but provided just one measure – relative preferences. There were six between-subjects conditions, reflecting a 2(focal sandwich presentation: above vs. below) x 3(various

calorie combinations, with focal sandwich R always having fewer calories –R-246 vs. H-331; R-246 vs. H-848; R-250 vs. H-350). The typical case (from the previous study) is R-246 vs. H-331. The case R-246 vs. H-848 holds the information about the focal sandwich constant, but the participant can instantly make out – without calculations – that the calorie gap is very substantial. The case R-250 vs. H-350 is similar to the typical case, but the subtraction is vastly simplified. Thus, in the latter two cases, relative location of the focal sandwich is less expected to lead to differences in calorie-gap perceptions, and thus less expected evidence preference differences.

*Results.* An ANOVA for relative preferences and perceptions of calorie differences indicated significant main effect of calorie combinations ( $F(2,183) = 6.46, p < .01$ ), significant main effect of focal sandwich presentation ( $F(1,183) = 4.22, p < .05$ ), and a significant interaction effect ( $F(2,183) = 3.35, p < .05$ ).

Considering the case R-246 vs. H-331, relative preference for focal sandwich was significantly higher when presented below, with  $M = 3.03$  vs.  $M = 4.48$  ( $t(63) = 3.58, p < .01$ ), similar to Study 1. In contrast, and as expected, in the cases R-246 vs. H-848 ( $M_s$  2.82 vs. 2.88) and R-250 vs. H-350 ( $M_s$  3.91 vs. 3.97), relative preferences were similar (both cases,  $t < 1$ ). These similar results, contrasted against the dissimilar result in the case R-246 vs. H-331, were consistent with both H1 and H2.

### Study 2: Relative preference between sandwiches R vs. H



### Conclusion

Our hypotheses draw from, and integrate, literature pertaining to marketing and numerical cognition, and multiple studies provide mutually consistent support for our hypotheses. This work contributes to theory by detailing a novel information processing sequence, which reveals how consumers’ numeric comparisons and subsequent evaluations depend on contextual factors that either help or hinder consumers’ ability to perform subtraction tasks.

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***When Precision Protects: Precise Product Information as a Source of Control.***

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Consumers regularly confront situations in which they experience an episode of control loss (e.g., traffic jams, threatening news reports). Despite the ubiquity of such situations, knowledge about how control threats influence consumer decisions is limited. Recently, research has shown that when people see no immediate possibility to restore personal control after a threat, they search for alternative ways to protect themselves from the threatening realization that the world can be an unpredictable place (e.g., by searching for structure; Whitson and Galinsky 2008).

In the current work, we propose that the need to view one's environment as predictable also implies an increased intolerance of ambiguity. Because ambiguity is 'the subjective experience of missing information relevant to a prediction' (Frisch and Baron 1988), any ambiguity renders one's environment less predictable. As such, losing personal control may lead to an increased intolerance for ambiguity. Somewhat hinting at this possibility, Cutright et al (2013) recently argued that losing personal control makes consumers mentally erect narrower cognitive boundaries around a brand, which in turn leads them to reject poor fitting brand extensions. Although the notion of ambiguity is not explicitly evoked, the construction of narrower cognitive boundaries seems to suggest an attempt to reduce ambiguity in the conceptualization of the brand. Hence, the results of Cutright et al (2013) may hint at a general tendency that people who lack personal control want reduce ambiguity as much as possible.

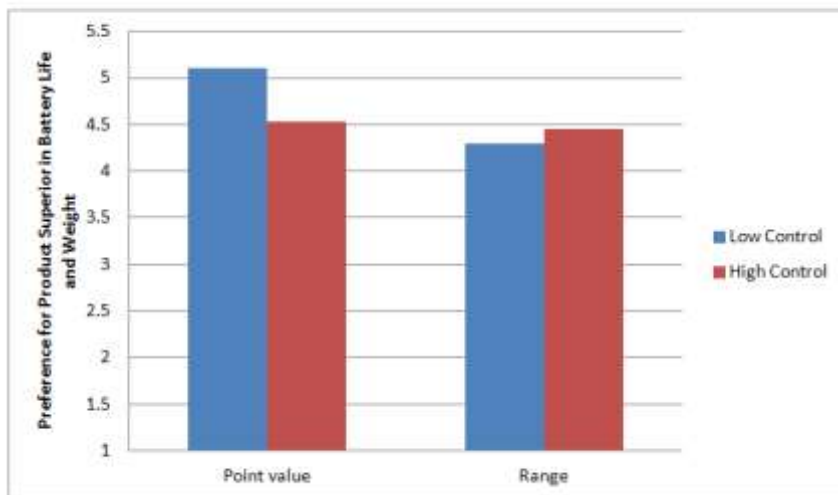
Interpreting earlier findings as evidence for a tendency to reduce ambiguity allows for making new predictions. Given that the precision with which information is described may (negatively) affect the experienced level of ambiguity, we propose that consumers who experience lower personal control may have a stronger preference for more precise product information relative to those who have control (study 1). We show that they rely more on precisely specified attributes in their decisions (study 2). In a third study, the effect of a control threat on preference for precisely specified attributes (e.g., 13 hours) is eliminated when the same attributes are specified in a tight range (e.g., 12-14 hours).

In the first study, 153 lab participants completed a recall task in which they described either an incident in which they did not have any control or an incident in which they were in complete control. Afterwards, participants were presented with two smartphones (appendix A). Half of the participants were asked to look closely at the attributes and to indicate their final choice on the next page. The other half followed the same instructions except that when they clicked on an attribute value, a more precise description appeared. We collected the number of times participants clicked on an attribute. When control was threatened, participants clicked significantly more to see more precise information ( $M = 7.61$ ) than when control was not threatened ( $M = 9.17$ ;  $t(75) = 2.78$ ,  $p < .01$ ). In all conditions time spent was recorded. When participants had no access to precise information, no significant difference between high and low control conditions was found ( $F(1,149) = .33$ ,  $p = .57$ ). However, when participants had access to precise information, participants who experienced a control threat ( $M = 10.51$ ) tended to spend more time looking at the attribute information than those who had control ( $M = 10.32$ ;  $F(1,149) = 3.41$ ,  $p = .07$ ).

In a second study, 144 lab participants completed one of the recall tasks from study 1. To control for mood, participants completed the brief PANAS scale after the manipulation (Tellegen, Watson, and Clark 1988). Next, participants were presented with a choice between two smartphones. Smartphone B was superior on memory capacity and talk time, while smartphone A was superior in terms of battery life and warranty (appendix B). Importantly, the former two attributes were precisely specified, while the latter two attributes were expressed in a less precise format. Finally, participants chose between two smartphones on a seven-point scale (1 = "strongly prefer product A"; 7 = "strongly prefer product B"). Results showed that when control was threatened, participants favored product A – superior on the precisely specified attributes – more ( $M = 3.67$ ) than when control was not threatened ( $M = 3.03$ ;  $t(140.22) = 2.14$ ,  $p < .05$ ). Controlling for mood did not change results.

Importantly, our theorizing predicts that when no precise information is available, the difference in preference between high and low control conditions should be eliminated. To test this proposition, we added two conditions in which no precise information was present by using range information (“14 – 16 hours battery life”) instead of point values. As such, we kept the expected value of both attributes identical and introduced a slight degree of ambiguity. In total, 279 Mturk participants first completed one of the recall tasks from study 1. Half of the participants made a choice between the two MP3 players; one was superior on two attributes (battery life and weight) that were specified in a precise format, the other was superior on two relatively less precise attributes (appendix C). The other half were presented with an alternative pair of MP3 players for which both attributes were specified in a range format (appendix D).

PREFERENCE AS A FUNCTION OF LEVEL OF CONTROL AND TYPE OF SPECIFICATIONS: STUDY 3



When weight and battery life were specified in point values, preference for the alternative superior on those attributes was marginally higher for those who recalled a loss of control situation ( $M = 5.11$ ) than those who recalled a situation in which they had control ( $M = 4.53$ ;  $F(1,275) = 3.28$ ,  $p = .07$ ). As expected, we find that this effect disappears when information was specified in a range format ( $M = 4.29$ ;  $M = 4.45$ ;  $F(1,275) = .22$ ,  $p = .64$ ).

In this research, we specifically focused on product information, but may our results may speak to other domains. Managers are frequently confronted with control threats (e.g., market fluctuations). It could be that when managers experience control threat, they are more likely to pay attention to more quantitative indices of performance, instead of less precise ones, even when the former are less representative of reality.

## APPENDICES

### APPENDIX A:

#### Smartphone A

Large storage capacity  
Average screen size  
Rather lightweight  
Rather long battery life  
Compact Size  
Long warranty

#### Smartphone B

Rather large storage capacity  
Average screen size  
Lightweight  
Long battery life  
Rather compact size  
Rather long warranty

### APPENDIX B:

<b><u>Smartphone A</u></b>	<b><u>Smartphone B</u></b>
Android phone	Android phone
4 gigabyte memory	6 gigabyte memory
Extra long warranty	Long warranty
6 hours talking time	7.5 hours talking time
Long battery life	Medium battery life
4G network	4G network

APPENDIX C:

<b><u>Brand A</u></b>	<b><u>Brand B</u></b>
30 GB internal storage	30 GB internal storage
Rechargeable battery lasts 13 hours	Rechargeable battery lasts 16 hours
Supports MP3 and WMA files	Intuitive interface
Weighs 5.5 oz.	Weighs 5.2 oz.
Ultra bright color display	Comes with a carrying case
Voice recorder	Voice recorder

APPENDIX D:

<b><u>Brand A</u></b>	<b><u>Brand B</u></b>
30 GB internal storage	30 GB internal storage
Rechargeable battery lasts between 12 - 14 hours	Rechargeable battery lasts between 15 - 17 hours
Supports MP3 and WMA files	Intuitive interface
Weighs between 5.4 – 5.6 oz.	Weighs between 5.1 – 5.3 oz.
Ultra bright color display	Comes with a carrying case
Voice recorder	Voice recorder

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*Ethical Attribute Benefits for Private Label Brands*

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Although there is a greater demand for ethical attributes (i.e., product attributes that reflect social and environmental issues), research shows that offering ethical attributes may not always improve product evaluations or choice share (Luchs, Naylor, & Irwin, 2010; Lin & Chang, 2012). For example, the benefit sought on a product category (Luchs et al., 2010) and task type (inclusion versus exclusion; Irwin & Naylor, 2009) affect evaluation of ethical attributes for products. Building on earlier research, we investigate the impact of ethical attributes on brand evaluations, test whether the type of brand (PLB vs. NB) and price level moderates the impact of ethical attributes on brand evaluations, and examines perceived quality improvement as the underlying mechanism.

Gupta and Sen (2013) argue that the extent to which costly ethical attributes affect product response depends on consumers' beliefs about the company's resource allocation to ethical and functional attributes. Positive resource synergy refers to consumers' belief that offering ethical product attributes enhances a company's ability to make better products. However, negative resource synergy refers to beliefs that the company promotes costly ethical attributes at the expense of quality. When there is negative (positive) resource synergy, the ethical attribute hurts (improves) the product's appeal. Based on this argument and price as a quality cue (Shiv, Carmon, & Ariely, 2005), we predict that adding an ethical attribute enhances consumer evaluations of high-priced PLBs, as consumers infer higher quality through higher price and perceive a positive resource synergy. In contrast, when low-priced PLBs offer ethical attributes, consumers may perceive a negative resource synergy (i.e., inferred lower quality of the PLB could have been improved instead of offering ethical attributes) and addition of an ethical attribute may hurt brand evaluations.

However, we expect no change in evaluations of NBs in the presence of an ethical attribute because NBs are generally better known brands with greater number of brand association (attributes, usage situations, extensive advertising supports etc.) and ethical attributes would add little to the product's quality. However, PLBs are generally associated with fewer brand associations (less familiar to consumers) and the perceived-quality gap between them leaves room for ethical attributes to serve as a quality signal for PLBs. This is in line with Arora and Henderson (2007)'s findings showing that embedded premiums (an example of cause-related ethical attribute) increases perceived quality of an unknown brand (i.e., PLB), whereas perceived quality of a known brand (i.e., NB) remains unchanged.

Empirically, we demonstrate in Study 1 that PLBs benefit more from ethical attributes than NBs. We generalize this effect to different PLBs, different product categories, and different types of ethical attribute in Study 2. Finally, we test the moderating effect of brand type and price and the moderated-mediation effect of perceived quality improvement on conditional indirect effect of price on PLB evaluations in Study 3.

**Study 1** (n=55) used a 2 (ethical attribute: present vs. absent [control])  $\times$  2 (brand type: PLB vs. NB) with ethical attribute (Made by a company that is child-labor-free and is in cooperation with Free The Children) as a between-participants and brand as a within-participants factor for ketchup. After viewing images of two brands next to each other (one NB and one PLB) with a description including brand name and price (PLB with high price), each participant provided brand evaluations (on a scale of 1-100) for both NB and PLB. A repeated-measure ANOVA showed a significant interaction between ethical attribute and brand type. The ethical attribute increased evaluations of the PLB ( $M_{control}=25.19$  and  $M_{ethical}=49.89$ ;  $F(1,51)=11.53$ ,  $p = .001$ ) but did not influence evaluations of the NB ( $M_{control}=92.59$  and  $M_{ethical}= 91.70$ ,  $p >.8$ ). We also measured and ruled out the effect of importance of ethical attribute as the alternative explanation. No significant two-way ( $p >.39$ ) or three-way interactions ( $p > .40$ ) involving ethical attribute importance emerged.

**Study 2** (n=80) employed a 3 (ethical attribute: cause-related, product-related, none [control])  $\times$  2 (brand type: PLB vs. NB) mixed design with ethical attribute as a between-participants and brand as a within-participants factor. It also utilized a different PLB, a different ethical attribute (made with natural and locally supplied materials) and a different product category (laundry detergent) to increase the external validity. Similar to study 1's results, PLB evaluations increased in the presence of both a cause-related ethical attribute ( $M_{control}=29.04$  and  $M_{cause}=43.12$ ;  $p < .05$ ) and product-related ethical attribute ( $M_{product}=49.68$ ;  $p < .01$ ) but did not change evaluations of the NB ( $M_{control}=75.50$  and  $M_{cause}=73.62$  and  $M_{product}=72.39$ ,  $p > .8$ ). However, the type of ethical attribute (cause vs. product) did not significantly affect PLB evaluations ( $p > .31$ ).

**Study 3** (n=79) investigates the potential role of price by using a 2 (ethical attribute: present vs. absent [control])  $\times$  2 (brand type: PLB vs. NB)  $\times$  2 (PLB's Price: high vs. low) mixed-design with ethical attribute and PLB's price as between-participants factors and brand as a within-participants factor for potato chips. Importantly, there was a significant three-way interaction between ethical attribute, brand type, and price ( $F(1,74) = 6.90$ ,  $p < .05$ ). Contrast analyses revealed that the positive effect of the ethical attribute on PLB only emerged when the PLB was high-priced ( $M_{control} = 38.94$  and  $M_{ethical} = 54.17$ ;  $F(1,74) = 2.88$ ,  $p < .10$ ), whereas the ethical attribute backfired when the PLB carried a low price ( $M_{control} = 64.40$  and  $M_{ethical} = 45.39$ ;  $F(1,74) = 5.45$ ,  $p < .05$ ). The ethical attribute had no effect on the NB in high-priced PLB condition ( $p > .6$ ) or low-priced PLB condition ( $p > .7$ ).

Moreover, the moderated-mediation test (PROCESS model 8 with 5000 bootstrap; Hayes, 2013) revealed that perceived quality improvement serves as the mediator for the conditional indirect effect of ethical attribute on brand evaluation. Specifically, there was a positive conditional indirect effect through perceived quality improvement for the premium-priced PLB (effect = 1.325, SE = 1.313, 90% CI: [.0025, 4.737]), and a negative conditional indirect effect of the mediator in the low-priced PLB condition (effect = -1.685, SE = 1.356, 90% CI: [- 4.871, -.1268]).

We find that adding an ethical attribute (1) does not change consumer evaluations of NBs, (2) enhances consumer evaluations of retailer's high-priced PLBs, (3) lessens consumer evaluations of low-priced PLBs, and (4) enhances (declines) evaluations of a high-priced (low-priced) PLB through improving (weakening) quality perceptions of the PLB.

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### ***The Influence of Horizontal and Vertical Product Attribute Information on Consumer Choice under Risk: The Role of Perceived Competence***

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One general assumption in the literature on consumer choice under risk is that consumers tend to prefer larger over smaller expected returns and smaller risks over larger risks (Pratt 1964), resulting in stronger preference for alternatives that provide the highest estimation of product utility (Conchar et al. 2004; Erdem and Swait 2004). When estimating product utility, consumers can rely on a multitude of product attributes that can be broadly classified into horizontal and vertical product attributes (Gabszewicz and Thisse 1986; Sutton 1986). Horizontal attributes are defined as those that reflect a consumer's personal preference but do not necessarily affect the actual performance of the product. In contrast, vertical attributes provide a clear ranking-based standard for product evaluation in which the majority of consumers agree on the ranking of the vertical feature. Taking such distinct characteristics into consideration, a case can be made that, in the face of greater levels of risk, consumers are more likely to base their decisions on

vertical attributes rather than on horizontal attributes as they provide more direct and objective means of evaluating a product among the choice options in regards to actual product performance.

We offer an alternative account which predicts that consumers shift their focus from vertical to horizontal product attribute information when the purchase involves higher levels of risk. When choice formulation involves risk, prior research on ambiguity aversion (Ellsberg 1961; Klein et al. 2010) has found that individuals prefer known-risk over unknown-risk alternatives. According to the competence hypothesis (Heath and Tversky 1991), ambiguity aversion results from people tending to have favorable perceptions of their own competence, as it allows people to better justify their decisions regardless of the actual outcome. Based on this rationale, we propose that consumers' tendency to have favorable perceptions of their own competence may lead them to place greater emphasis on horizontal attributes rather than vertical attributes when facing higher levels of risk. This is because horizontal attributes better capture one's subjective self-evaluated values that are reinforced through increased familiarity and experience with the given context (Carpenter and Nakamoto 1989; Kahneman and Snell 1988; Tversky and Kahneman 1974), and therefore may be perceived as information about which consumers deem themselves to be more competent. We test these competing accounts of choice under risk in three experiments.

In experiment 1, participants chose between a refrigerator featuring a less desirable color (i.e., horizontal attribute) and larger capacity (i.e., vertical attribute), and a refrigerator featuring a more desirable color but smaller capacity. We manipulated perceived risk via retailer return-policy leniency. As predicted, participants were more likely to choose the refrigerator with the more desirable color and smaller capacity in the high-risk condition (65.2%) than in the low-risk condition (46.5%;  $\chi^2(1) = 6.18, p = .01$ ). In experiment 2, we addressed a number of additional alternative accounts by replacing the refrigerator-choice purchase scenario with a financial investment scenario (i.e., a non-social context where the choice outcome is unlikely to be observed by others) where risk was manipulated via investment return (i.e., pure financial risk unrelated to one's ability to return the product), and also used a vertical product attribute that more unambiguously signals performance (i.e., number of monthly transactions free of additional charges). Consistent with our predictions, we find that participants were more likely to choose a financial institution with the more desirable sustainability initiative and smaller number of monthly transactions in the high-risk condition (67.4%) than in the low-risk condition (33.3%;  $\chi^2(1) = 10.56, p < .001$ ).

In experiment 3, we focus on providing additional process evidence for the predicted mechanism by showing that consumers rate themselves to be more knowledgeable on horizontal product attributes than on vertical product attributes under greater levels of risk (no-learning condition). However, if consumers become more knowledgeable about the vertical attribute (learning condition), then such increase in competence should produce a reversal of the direction of the effect observed in the previous experiments. In the no-learning condition, participants were more likely (marginally significant) to choose the refrigerator with the more desirable color and smaller capacity in the high-risk condition (45.0%) than in the low-risk condition (20.0%; Wald  $\chi^2(1) = 3.07, p = .08$ ). In contrast, when participants' competence about the vertical product attribute was raised, participants were less likely to choose the refrigerator with the more desirable color and smaller capacity in the high-risk condition (18.2%) than in the low-risk condition (45.0%; Wald  $\chi^2(1) = 3.76, p = .05$ ). An analysis of the process measure revealed a significant interaction between the risk and learning factors ( $\chi^2(1) = 5.66, p = .02$ ). In the learning condition, overall capacity had a marginally significant probability of being ranked higher in the high-risk condition (49.6%) than in the low-risk condition (25.9%;  $\chi^2(1) = 3.35, p = .07$ ). In contrast, in the no-learning condition, overall capacity had a marginally significant probability of being ranked higher in the low-risk condition (37.5%) than in the high-risk condition (19.7%;  $\chi^2(1) = 2.63, p = .10$ ). This pattern of perceived competence with the vertical product attribute along with the reversal in choice proportions across learning conditions supports the hypothesized competence-based mechanism.

Our research adds to the stream of literature on information processing by examining consumer choices of products featuring attributes that reflect a consumer's personal preference (but do not affect performance) – horizontal attributes – and attributes that

affect performance and provide a basis for a ranking of the options – vertical attributes – under risk. Overall, this research demonstrates that product information that does not objectively affect the actual performance of the product may actually become more important in a choice decision associated with higher levels of risk. This effect stems from the belief that people tend to have favorable perceptions of one's competence, which is argued to become more preferable under risky purchase situations. Our results are of particular importance for products and services for which the value proposition is based on vertical attributes that cannot be unambiguously discerned by consumers (e.g., internet speed, processor capacity).

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## ***Individual Papers: To Have and to Hold or To Do and Remember: Experiential and Material Purchases***

***Experiential risk seeking: Why prospect theory holds for material but not experiential choices.***

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Risk aversion emerges as a common phenomenon of consumption decisions. It occurs when the majority opts for a higher probability, lesser reward over a lower probability, greater reward (Kahneman & Tversky, 1979; Tversky & Kahneman, 1991) and has been found for brand choice (Hardie, Johnson, & Fader, 1993), capital investment decisions (Payne, Laughhunn, & Crum, 1994), and monetary reward gambles (Tversky & Kahneman, 1992). In the current work, however, we propose that when contemplating intangible, experiential rewards such as a vacation or concert, risk seeking will tend to occur, and that risk aversion tends to hold only when contemplating material, tangible purchases such as cars and televisions.

Recent work points to the role of storytelling in driving increased enjoyment of experiential purchases, in part because talking about one's experiences affirms and boosts connection to the self (Kumar & Gilovich 2013; Bastos, 2013). Experiential purchases are also more likely to be shared, talked about, and embellished upon (Kumar & Gilovich, 2013; Howell & Hill, 2009), a process which enhances the significance of experiences and facilitates incorporation of key experiences into the extended self (Belk, 1988). If self-focus drives increased enjoyment of experiences, how else might an accentuated self-connection alter choice in the experiential (vs. material) domain? We propose that contemplating experiential purchases leads to an increased focus on the self, which enhances risk seeking beyond levels observed for material objects and cash.

Experiences are characterized by spending time, which the literature reveals is also more personally meaningful and more self-connecting than spending money (Aaker, Rudd & Mogilner, 2011). Okada and Hoch (2004) found that individuals were risk averse for high risk/large return options when spending money, but risk seeking when costs were framed in terms of time. The activation of the concept of time spent can lead to a focus on personal experiences with a product (Mogilner & Aaker, 2009), whereas activating money concepts leads to a focus on the product as a possession. Experiential purchases such as concerts are also time-focused and characterized by being closer to one's self than material purchases (Nicolao, Irwin, & Goodman, 2009). We suggest that thinking about experiences involves focusing on how consumers spend their time in a meaningful way, with the potential of incorporating such memories into one's identity. Therefore, as items exhibit more potential for spending time and creating self-connection, we propose this will lead to more risk seeking, contrary to the claims of prospect theory. Alternatively, consumers



should be more risk averse for material items, which are construed in terms of monetary value and tend to be less self-connecting. This mirrors the predictions of prospect theory.

We first test these ideas in choice-pair gambles to examine how material and experiential purchases might differentially lead to risk aversion and risk seeking. In study 1, more than 64% of participants ( $N = 98$ ) preferred smaller reward/larger probability options ( $m's > 64\%$ ;  $p's < .01$ ) for material gambles, such as a choice between iPods with varying features and differing chance of winning, indicating risk-aversion for material choices. For experiential gambles (e.g., live theatre and hotel experiences), 63% of participants preferred larger reward/smaller probability options ( $m's > 63\%$ ;  $p's < .01$ ), indicating risk-seeking.

Study 2 found the same effect but manipulated whether an iPod was thought of in more material (e.g., the number of albums it could hold) versus experiential terms (e.g., how listening to a playlist makes you feel; [Carter & Gilovich, 2012](#)). Participants were risk seeking for the lesser chance of winning the iPod with more features in the experiential condition, yet risk averse and more likely to choose the iPod with fewer features and a greater chance of winning in the material condition. In this case, the effect of condition on risk seeking was mediated by feelings of connectedness to the iPod, which were stronger in the experiential condition 95% CI [.06, 1.59].

We manipulated feelings of connectedness in studies 3 (sentence scramble) and 4 (essay manipulation), to demonstrate that increased feelings of connectedness can lead to risk seeking for both experiential and material choices. In study 3, a mediation model revealed that connectedness to an experiential reward mediate the risk seeking effect, with only those more connected to a restaurant seeking the lower likelihood of a larger meal reward option, CI 95% [-1.16,-.08]. In study 4, priming connectedness led to more risk seeking for a better material option—a mug—than being primed with neutral words,  $F(1,194) = 4.221$ ,  $p = .04$ . In both studies, being primed with thoughts about connectedness led to more risk seeking for the larger, lower probability option, lending further support for our proposed mechanism.

In study 5, we examine the role of time versus money salience through an essay asking participants how they use their money (time) in a typical week (Zhou, Vohs & Baumeister, 2009). For both material (jeans, sunglasses; all  $p's < .04$ ) and experiential (plays, rodeo; all  $p's < .05$ ) paired gambles, participants in the time condition showed significantly more risk seeking by preferring high reward/lower probability choices than participants in the money condition. In other words, the pattern is the same for both purchase types, with money activation fostering risk aversion and time activation increasing risk-seeking behavior. This leads us to suggest that time activation for experiences cues thoughts about connectedness and the self, and as a result, consumers are risk seeking for more potentially self-connected experiences.

To our knowledge, our work represents the first explanation of boundary conditions under which the risk-aversion proposed in prospect theory does not hold. Across five studies, we find that experiential purchases foster risk seeking and that this effect occurs because experiences—like concerts and vacations—are naturally construed in terms of time spent and prospective self-connection, which leads to risk seeking for more potentially self-connecting, though also more risky, experiential options. In this context, we find that prospect theory only holds for material objects, and that even for material objects consumers can become more risk seeking when they focus on time or connectedness.

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***So Difficult to Smile: When and Why Unhappy People Avoid Enjoyable Experiences***

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People want to be happy (Zillmann 1988), especially people experiencing negative emotions (Shen and Wyer 2008). In this research, we consider whether people experiencing negative emotions are more or less likely than those in a neutral mood to seek enjoyable future outcomes and experiences.

We posit the irony of negative mood is that it automatically makes people want to become happier, but associated physiological reactions also deter people from choosing activities and experiences that could make them happier. On the one hand, an individual's negative mood automatically evokes that person's mood-repair goals (Zillmann 1988), resulting in activities to improve mood, such as eating chocolate, listening to music, watching comedies or helping others (Andrade and Cohen 2007). However, a negative mood also automatically evokes frown-like expressions, resulting in tightening of the jaws and narrowing of the eyes. These reactions are the opposite of smile-like expressions that simulating positive experiences engender, including softening of the jaws and widening and crinkling of the eyes. These facial-muscular groups and reactions may be so opposing that smiling and frowning at the same time is extremely difficult if not impossible.

Unaware of the true source of subjective feelings, people are likely to misattribute these feelings to unpleasantness of the enjoyable experience, and as a result avoid it (Shen Jiang and Adaval 2010). Moreover, if an enjoyable experience relies less on facial-muscular simulation, people in a negative mood should not avoid enjoyable products or experiences. Instead, people should become more likely to choose such experiences than otherwise and compared to people in a neutral mood, in line with their mood-repair goals.

Study 1 followed a 2 (participant's mood: negative vs. neutral)  $\times$  2 (simulation: facial vs. auditory) between-subjects design in which respondents made a choice between interacting with a cheerful other or with a neutral other. To manipulate mood, participants were first assigned at random to recall unhappy or neutral event in their lives. Then, they were told they would be choosing a cell-phone plan. They were provided with pictures of two possible sales people and asked which one they would like to get information from. One sales person looked cheerful, while the other had a neutral expression. In the facial simulation condition, participants were induced to simulate the experience of interacting with the salesperson by being told they would interact intensively with the person. In the auditory simulation condition, they were told that they would not interact with the salesperson but would instead simply listen to that person. We predicted participants in a negative mood will be less likely than those in a neutral mood to choose to interact with a cheerful person, because they will spontaneously make smile-like facial simulation and attribute difficulty of simulation to the experience. However, when they will not interact with the salesperson, the need to simulate smile-like expressions will be attenuated and the simulation effect will disappear. Instead, mood-repair goals will lead participants in a negative mood to become more likely than participants in a neutral mood to choose the enjoyable experience. The results of study 1 were consistent with our assumptions.

Study 2 examined whether our assumptions also hold when people simulate an enjoyable experience in which they would engage in private. In study 2, participants in the facial simulation condition were placed in an unhappy or a neutral mood and were asked to choose between singing an upbeat or neutral song, under the rouse of testing microphone. Participants in the auditory simulation condition instead were asked to choose between listening to an upbeat or neutral song, under the rouse of testing earphones. All participants were told the product test would take place in private. As we expected, unhappy participants preferred singing the happy song less than neutral mood participants, because of the difficulty of simulating this experience in negative vs. neutral mood condition. In contrast unhappy participants preferred listening to the happy song more than neutral mood participants, because of the mood-repair goal. Study 3 further showed that participants were less likely to prefer singing the happy song if we put them in a physical bodily state in which their smile-like expressions are inhibited (i.e. holding a piece of biscuit with their lip) than if those expressions are facilitated (i.e. holding the biscuit with their teeth).

An interesting question concerns whether people in a negative mood are prudent to avoid the enjoyable experience based on their subjective feelings of difficulty, because if they engaged in the activity they might actually feel worse, or whether subjective difficulty misguides them. Study 4 sought to answer this question. In this study, participants were induced to feel either negative or neutral. In one condition, to replicate study 2's findings, we asked participants to predict their reaction toward singing a familiar happy song. In a second condition, however, we asked them to actually sing that song and then report their reaction toward singing it. We found negative-mood participants reacted more unfavorably than those in a neutral mood toward singing the happy song due to feelings of subjective difficulty arising from facial-muscular simulation of this experience. However, when made to sing the song, they would be able to repair negative mood by singing a happy song and as a result would feel much better and react more favorably toward this experience than people in a neutral mood.

In sum, across four studies, we showed that unhappy participants avoid enjoyable experience because they misattribute feelings of difficulty arising from simulating the experience to the outcome itself. When the need to simulate smile-like expression is reduced, the effects are attenuated. In addition, as the last study showed, avoiding cheerful experiences because of simulated difficulty may be imprudent for unhappy people, because forcing themselves to engage in such activities makes them feel better. These findings are among the first to show, ironically, that unhappy people are less likely to choose activities that will make them happy the more they try to simulate the experience. Our findings add to the area of embodied cognition and mimicry effects and show for a first time that one's mental simulation of an enjoyable experience can depend on one's current bodily state.

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### ***Never Truly Alone, We Always Have Our Purchases: Experiential versus Material Attachment Predicted by Loneliness and Gender***

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Items are incorporated into the extended self when an individual is able to derive self-meaning or self-worth from them (Ferraro, Escalas, & Bettman, 2011), but the extended self is neither permanent nor limited in nature (Elster, 1985). The present research uses loneliness and gender as explanatory variables underlying possible differential attachment tendencies. Just as individuals display varying material attachment tendencies (Ferraro, et al., 2011), so too should they exhibit differential experiential attachment propensities. This research is the first to examine precursors to incorporation of material versus experiential purchases into the extended self.

Loneliness deals with social deficiency—one's social network is perceived as inadequate in size or depth (Peplau & Perlman, 1979) -- and up to 25% of the population can suffer from loneliness at any point in time (Cacioppo & Patrick, 2008; Cornblatt, 2009). One of the ways individuals can cope with loneliness is to psychologically decrease the gap between desired and actual level of social interaction (Perlman & Peplau, 1981). One way to reduce this gap is to reflect on and attach to purchases that represent their social self, allowing psychological affirmation of their social connection to others.

I propose that both genders will attach to those purchases that they feel best affirm their social self when lonely, and previous research suggests that the nature of these purchases will vary by gender. Women seem to view their material possessions more in terms of their representation of relationships with others (Wapner, Demick, & Redondo, 1990), so they are more likely than men to choose their

most important possessions based on the relationships they signify (Kamptner, 1989; Kleine & Baker, 2004). If women are in fact more likely to use material possessions to maintain and build relationships (Csikszentmihalyi & Rochberg-Halton, 1981), then lonely women might be more likely to use material attachment to affirm their social self.

In contrast, previous research indicates that men view and value their relationships with others more in terms of shared activities or experiences (Caldwell & Peplau, 1982; Swain, 1989; Wright & Crawford, 1971). Married men tend to express their affection through action and initiating shared activities (Schoenfeld, Bredow, & Huston, 2012). Based on these findings, I predict that lonely men will seek out and attach to experiential purchases.

Studies 1 & 2 manipulate feelings of loneliness through false feedback scores (Wildschut, Sedikides, Arndt, & Routledge, 2006). In study 1, participants were asked to list their five most self-defining purchases and rate each purchase as material versus experiential (1-purely material to 7-purely experiential) and how important it is to their self (7-point scale). To compute a weighted experiential attachment score, I multiplied the material-experiential classification by its assigned importance score and averaged across the 5 purchases. A gender by loneliness condition interaction predicts the weighted experiential score,  $F(1,83)=7.113$ ,  $p=.009$ . Women and men significantly differed from one another in the high loneliness condition ( $t(41) = 1.98$ ,  $p=.055$ ), with women (men) attaching more to their material (experiential) purchases.

In study 2, after receiving the same loneliness prime, participants were asked to write about/share two of their most self-identifying purchases and to score the purchases as material versus experiential (100 point scale). Results indicated a significant gender by loneliness interaction predicting the average of these experiential scores,  $F(1,114)= 6.305$ ,  $p=.013$ . No differences were found in the low loneliness condition ( $p=.41$ ), but high loneliness participants showed significant sharing/attachment differences ( $t(56)=2.75$ ,  $p=.008$ ); lonely men (women) attach more to their experiential (material) purchases.

In studies 3 and 4, I examine the mediating role of perceived social value of material versus experiential purchases. In study 3, participants were asked to recall their daily routine (control) or times when they felt lonely/isolated or companionship/connectedness. Next, participants were asked to list their most self-defining material and experiential purchase and indicated which of those was most self-defining. Participants then filled out a 5-item scale of perceived social value of experiences versus material purchases (based on Zhang et al., 2013; e.g. I get more recognition from others for my: 1-definitely more from my material purchases to 7- definitely more from my experiential purchases). Moderated mediation analyses were conducted to examine how the interaction between gender and loneliness impacts choice of most self-defining purchase and how that effect is mediated by perceived social value of the different purchase types. The mediation analyses support our hypotheses, 95% CI [.02, .49], indicating that lonely women (men) view their material (experiential) purchases as having a higher social value and, therefore, choose that purchase type as being most self-defining for them.

Study 4 used a sentence-unscrambling prime (lonely versus control), with the same dependent measure used in Study 1. In addition, participants filled out a 3-item scale of perceived social value of experiences versus material purchases (e.g. Using \_\_\_\_\_ gives me social approval; based on Pura, 2005). Moderated mediation analyses supported our hypotheses, 95% CI [-78.85,-10.63]. Women and men perceive the social value of experiential and material purchases differently, which leads to different patterns of purchase attachment.

Study 5 examines how the goal of affirming one's social self (social motivation) drives the link between perceived social value and attachment to purchases. A 2 (material versus experiential social value prime) X 2 (social versus autonomy goals) design was used. Results indicate that being primed with the idea that material (experiential) purchases are better social tools only leads to material

(experiential) attachment when social goals are activated (95% CI [-33.57, -2.03]) but not when autonomy goals are activated (95% CI [-11.36, 28.57]).

In sum, consumers' gender and loneliness play an important role in which purchases become part of their extended self. Both men and women reflect on and attach to those purchases that best reflect their social self when struck with feelings of loneliness. Yet, they differ in their perceptions of which types of purchases are in fact better social cues/tools. Future work will examine how attachment might impact word of mouth, future purchase decisions (i.e. Does material attachment lead to future material purchase tendencies?), and product line extension evaluations.

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***We'll Always Have Paris (Though We May Not Think of It): Consumers Overestimate The Frequency of Retrospection for Experiences***

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People enjoy retrospecting about past experiences and appear to do it quite often. Past research suggests that we spend upwards of 50% of relaxed, social conversation talking about our experiences (Dunbar, Marriott, and Duncan 1997) and that sharing information about ourselves and our experiences is intrinsically rewarding (Tamir and Mitchell 2011). It also appears to be one of the reasons why consumers are happier with their experiences than their material goods (Van Boven and Gilovich 2002). Furthermore, consumers seem to anticipate the future retrospection that experiences provide as they sometimes choose experiences as a function of their retrospective value (Keinan and Kivetz 2011; Ratner, Kahn, and Kahneman 1999). But how accurate are consumers at anticipating the frequency of their own retrospection?

Because sharing one's experiences is intrinsically rewarding, people should want to talk about their experiences. However, given the abundance of experiences people live through, people cannot and do not continue to talk about all of their experiences indefinitely. Memories of experiences are less likely to come to mind over time. Indeed, the majority of memories that people remember and think about have recently occurred (Crovitz and Schiffman 1974). Yet, since consumers have a strong desire to retrospect about their recent experiences, they may underestimate the difficulty of bringing past experiences to mind. Thus, we suggest that consumers systematically overestimate how much they will retrospect about an experience and inadequately recognize the need for reminders and queues to aid in reminiscing. We provide evidence of overestimation and demonstrate that this is motivated by a desire to talk about the experience.

In a first study, 220 participants were asked to consider an experience that had occurred 3-6 months in the past or that will occur 3-6 months in the future. After describing the experience, participants indicated how often they did (past condition) or will (future condition) think about and talk about the experience during the two months following the experience. Next, they rated the experience on a number of dimensions. As expected, participants who had written about an upcoming experience predicted they would retrospect about the experience more often than did participants who had written about a past experience ( $F(1, 157) = 15.08, p < .001$ ). This result held when adjusting for differences in participants' perception of their experience ( $F(1, 154) = 8.18, p = .005$ ) and when adjusting for the type of experiences people wrote about ( $F(1, 117) = 8.79, p = .004$ ). Thus, people considering a future experience predict more frequent retrospection than participants report having done after a past experience.

Study two conceptually replicated study 1 while holding the type of experience constant. Ninety-six participants wrote about a trip they took either the previous summer or one they expected to take the following summer. The dependent measures and trip ratings were the same as used in study 1. As expected, participants who had written about an upcoming trip predicted more frequent retrospection than participants in the past condition ( $F(1, 77) = 19.53, p < .001$ ). This result held when adjusting for differences in ratings of the trips ( $F(1, 75) = 13.11, p = .001$ ).

Study 3 was designed to rule out misconstrual of the future experience as an explanation for the overestimation of future retrospection. Therefore, in Study 3, participants attending the U.S. Open provided estimates of future retrospection a day *after* they attended the tournament and provided estimates of actual retrospection two months later. As predicted, participants predicted they would talk about the U.S. Open experience more often than they reported having done at time 2 ( $F(1, 139) = 259.62, p < .001$ ). This overestimation was moderated by participants' ratings at time 1 of their willingness to recommend the experience ( $F(1, 138) = 10.46, p = .002$ ). These findings indicate that the overestimation is not simply misconstrual of a future, unknown experience, and that it is more pronounced for people who feel more positively about the experience—suggesting a motivational process.

In study 4, we replicate the results of study 3 with an experience for which retrospection should be an important contributor to the value of the experience: an African safari. A group going on an African safari completed the survey days after returning to the U.S. and completed a follow-up survey two months later. In this study, we measured the estimated frequency of looking at pictures of the event rather than the estimated frequency of thinking about the event, since the former should be easier to objectively recall at time 2. Replicating earlier studies, participants overestimated how much they would retrospect about the safari ( $F(1, 26) = 21.42, p < .001$ ). In line with a motivational explanation, this overestimation was moderated by how much participants reported wanting to talk about the trip at time 1 ( $F(1, 25) = 6.078, p = .021$ ).

In a fifth study, we examine whether this overestimation is specific to hedonic experiences or whether participants overestimate how frequently they will retrospect about anything. Thus, participants were asked to forecast how much they would talk about and think about a purchase that was either an experience or a material good. At time 2, participants indicated how often they did in fact talk about and think about the purchase in the month following the purchase. Since material goods are physical reminders that persist, we expected that overestimation would be unique to experiences. As predicted, a repeated measures ANOVA indicated a significant interaction of time by purchase type ( $F(1, 73) = 8.407, p = .005$ ). Participants (marginally) overestimated how often they would retrospect about their experiences ( $F(1, 73) = 3.25, p = .076$ ), but *underestimated* how often they would retrospect about their material purchases ( $F(1, 73) = 5.16, p = .026$ ). To further establish the robustness of these findings, we are currently also running two additional field studies, one with attendees at an electronic music festival, and one with participants in fun runs around the country.

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## ***Individual Papers: Tight Wallets and Tight Supply: Effects of Scarcity***

### ***When Those Who Have the Least Spend the Most: Understanding the Relationship Between Resource Scarcity, Socioeconomic Status and Materialism***

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“Maybe someday I’ll be able to afford an iPhone like the person in front of me at the grocery store. The one paying with FOOD STAMPS!”

This remark was widely circulated on social media, generating long strings of indignant reactions regarding the inappropriateness of low-income consumers engaging in conspicuous consumption (Whitmer 2012). It illustrates the extent to which consumers can become upset, or even enraged, when they observe people who live in poverty spending their limited financial resources on unnecessary luxuries (Schechter 2011). However, to date, little academic research has directly examined if or when individuals of lower socioeconomic status (SES) might be prone to materialism.

In the current research, we argue that materialism among lower-SES consumers may represent an attempt to cope with resource scarcity. This proposition is based on the idea that by limiting one’s ability to interact effectively with the environment, resource scarcity undermines consumers’ perception of control. Building on past work showing that materialism helps consumers cope with uncertainty and self-doubt (Chang and Arkin 2002), we predict that consumers will likewise use materialism to cope with low perceived control stemming from resource scarcity. However, because lower-SES (vs. higher-SES) consumers already have limited means available, reminders of scarcity are likely to threaten perceived control to an even greater extent for these individuals. Consequently, we predict that the tendency for scarcity to engender materialism will be stronger for lower-SES (vs. higher-SES) consumers. Indeed, the idea that SES will moderate consumer response to scarcity is consistent with recent findings in the domain of evolutionary psychology, which has shown that SES moderates other scarcity responses such as impulsivity, self-control, and risk taking (Griskevicius et al. 2013). In sum, our theorizing suggests that materialism may not be a chronic tendency of lower-SES consumers. Rather, it may be a coping mechanism employed only when reminders of scarcity threaten their perception of control.

The goal of the first two studies is to demonstrate our proposed interaction between scarcity, SES and materialism. In study 1 (N=138), following Roux, Goldsmith and Bonezzi (2014), scarcity was primed by asking participants to list things they could not do without certain resources (e.g., water). Participants in the control condition were asked to list things that they could do with the same resources. Next, all participants completed the Envy sub-scale of Belk’s (1985) Materialism Scale. Finally, all participants completed a six-item subjective SES measure (Griskevicius et al. 2013), which is also used in all subsequent studies, along with other demographic questions. In line with our prediction, we found a significant interaction between the scarcity prime and SES ( $p=.05$ ). Lower-SES participants became more materialistic, expressing greater envy of other people’s material possessions, when exposed to reminders of scarcity (vs. control;  $p=.02$ ). Reminders of resource scarcity had no effect on higher-SES participants ( $p>.6$ ). Further, no main effects emerged.

In study 2 (N=105) we examined another indicator of materialism, by testing how reminders of resource scarcity and SES affect one’s belief that happiness can be achieved through material possessions. Participants in the scarcity-prime condition were asked to recall times when they felt resources were scarce, whereas those assigned to the control condition were asked to list activities they did in the past week (Roux et al. 2014). Next, all participants completed the Happiness sub-scale of Richins’ (2004) Material Values Scale. We again found a significant interaction between the scarcity prime and SES ( $p=.01$ ). Specifically, lower-SES participants were more likely to indicate that happiness can be attained through material possessions after being exposed to reminders of scarcity (vs. control;  $p=.01$ ), whereas reminders of resource scarcity had no effect on people from high-SES backgrounds ( $p>.3$ ).

Having demonstrated support for our prediction that lower-SES consumers’ materialistic tendencies are moderated by their exposure to reminders of resource scarcity, we next conducted a series of studies to provide a deeper understanding of the psychological processes underlying these effects. Study 3 (N=71) examined if the effect of SES on one’s desire for control was moderated by

whether or not reminders of resource scarcity were present. Participants first completed the scarcity manipulation used in study 1. Next, all participants completed a measure assessing their desire for control (Cutright 2012). In line with our predictions, results revealed a significant interaction between the scarcity prime and SES ( $p=.04$ ). Lower-SES participants expressed a greater desire for control when exposed to reminders of scarcity (vs. control;  $p=.04$ ), whereas reminders of scarcity had no effect on higher-SES participants ( $p>.4$ ).

The final study used a different operationalization of perception of control, in order to provide convergence on our theory. Prior work has shown that being in a promotion focus tends to foster an illusion of control, or an overestimation of one's control over an outcome (Langens 2007). Study 4 ( $N=115$ ) thus tested whether the effect of SES on one's regulatory orientation was moderated by whether or not reminders of resource scarcity were present. Participants first completed the scarcity manipulation task used in study 2. Next, participants' regulatory orientation was assessed using the Regulatory Focus Questionnaire (Higgins et al. 2001). Results revealed a significant interaction between the scarcity prime and SES ( $p=.02$ ). Lower-SES individuals became more promotion-focused when exposed to reminders of scarcity (vs. control;  $p=.03$ ), whereas reminders of scarcity had no such effect on higher-SES individuals ( $p>.2$ ). These findings were replicated in an additional study conducted on participants drawn from a different pool.

In summary, although media reports may lead one to presume lower-SES individuals chronically desire materialistic luxuries beyond their means, our research suggests that lower-SES consumers may only become more materialistic when faced with reminders of resource scarcity. Further, our findings suggest that this shift in materialism may occur because lower-SES consumers experience an increased desire to regain control and take action in the face of a scarcity threat. Although further research is necessary to fully understand the boundaries of these effects, this research provides an important first step towards understanding the relationship between poverty, scarcity and materialism, and suggests important public policy implications.

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### ***The Impact of Scarcity on Consumers' Choices of Multiple Items from a Product Class***

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Consumers often confront abundance or scarcity of items in a choice set. A grocery store can present large or small quantities of each type of fruit and vegetable, a clothing store can display large or small baskets of accessories, and governments can describe natural resources such as national parks as abundant or scarce. How does the degree of overall perceived scarcity of items within a choice set impact what items the consumer selects?

In spite of a rich body of literature on how scarcity of a single item enhances valuation of the specific item (Brock 1968; Verhallen and Robben 1994), how an overall level of scarcity across items from a product class affects the evaluation and choice of individual items in the choice set remains an intriguing, uninvestigated question. We build our theoretical framework based on two separate streams of research. First, it has been suggested that a stimulus that is scarce might induce an arousing state (Brehm 1966; Berlyne 1969; Cialdini 2009). Second, arousal has been shown to alter attention allocation (Broadbent 1971; Easterbrook 1959; Kahneman 1973) giving rise to judgment polarization (Mano 1992; Paulhus and Lim 1994). Building upon this literature, we theorize that scarcity of multiple items from a product class induces arousal, and that the heightened arousal polarizes the evaluations of individual items contained in the choice set, consequently increasing (decreasing) choices of the most-preferred (less-preferred) items.



The objective of Study 1 is to provide support for our main thesis that scarce (vs. abundant) supply of each alternative in a choice set polarizes the liking for the favorite versus non-favorites, and increases choices of the favorite item from the set. Participants were asked to imagine that they were shopping at a grocery shop and decided to buy four yogurts as there was a “Pick Any 4 for \$1” sale. They were told that the store carries a total of five different yogurt flavors including strawberry, raspberry, vanilla, peach and lemon. Participants in the abundant (scarcity) condition were told that there were many (only a few) of each flavor, approximately 50 units (5 units) of each remaining. All participants were then asked to rank the five yogurt flavors according to their preference, rate how much they like each flavor, and finally indicate which four yogurts they would choose. As predicted, we find that scarce (vs. abundant) supply of each alternative in the choice set polarized liking of the favorite versus non-favorites, and led people to select more units of their favorite item from the set.

To examine whether the mere perception of scarcity is sufficient to trigger these effects, in Study 2, participants were presented with pictures of four types of ready-to-eat vegetables. In the scarcity (abundance) condition, eight pieces of vegetables of each type were provided in four transparent large, 32 oz. (small, 8 oz.) food containers. A separate manipulation check confirmed that participants perceived the same supply level of vegetables as more limited when it was provided in the large versus small food containers. Results of Study 2 provide converging evidence for our key proposition, demonstrating that perceived (instead of actual) scarce versus abundant supply also polarized liking ratings and increased choices of the favorite. Further, in Study 2 we added popularity measures to investigate the alternative explanation of perceived popularity, and found that neither absolute nor relative popularity of the favorite was significantly different across the scarcity and abundance conditions.

We subsequently present two additional experiments to provide direct support for the arousal-based theorizing, demonstrating that the effect of scarcity versus abundance on choices between the most and less-preferred alternatives is mediated by reported arousal level (Study 3) and attenuated by experimentally induced arousal state (Study 4). In Study 3, participants were asked to pick four \$25 gifts cards from five different stores, and they were told that three participants in this study would be randomly selected to receive the four \$25 gift cards picked by them (total worth \$100). Consistent with our theorizing, scarcity increased choices of the favorite store’s gift card and the effect of supply level on gift card choices was mediated by reported arousal level. In Study 4, based on previous arousal research (Menon and Kahn 2002, Vosgerau 2010) showing that bright background color induces high-level of arousal, we manipulated a second factor, survey background color (arousing vs. control), in addition to supply level. Replicating previous results in another real choice context, subjects in the control conditions chose more pieces of their favorite candy in the scarcity versus abundance condition. Importantly, experimentally activating a high-arousal state for all participants through the bright background color eliminated the effects of the scarcity versus abundance condition on the number of pieces chosen of their favorite. Finally, Study 5 generalizes the proposed polarization effect to situations where a general sense of scarcity is activated. We find that activating the general concept of scarcity using a lexical decision task manipulation (Laran and Salerno 2012) also increased choices of the favorite item from a choice set.

To summarize, whereas prior research focused on how the scarcity of a single item impacts its attractiveness, here we examine how overall perception of scarcity across multiple items from a choice set influences choices of individual items in the set. We demonstrate that a uniform level of scarcity (vs. abundance) across items in a choice set increases choices of the most-preferred item, decreasing choices of the less-preferred items. We propose and find empirical support for an arousal-based polarization explanation.

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***My Trash is Your Treasure: Revisiting Participants’ Motivations to Engage in Alternative Giving Communities***

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Collaborative consumption, defined as the process of one or more persons engaged in joint consumption activities with fellow consumers (Felson and Spaeth 1978), includes concepts such as sharing (Belk 2010), redistribution markets, renting services, and collaborative lifestyles (Botsman and Rogers 2010). Researchers have started investigating motivations behind consumer participation and tensions which occur in the non-monetary marketplaces including free market and free cycle (Albinsson and Perera 2012; Arsel and Dobscha 2011; Nelson, Rademacher, and Paek 2007). However, most of these studies are heavily based upon interviews with limited participants. In addition, the existing studies fail to differentiate such non-monetary based consumption from previously explored constructs. Drawing on studies of both an on-site free market and an online freecycle community, this paper contributes to the existing collaborative consumption literature and practice by defining boundaries of alternative giving forms and revisiting consumer motivations which initiate participation in non-monetary marketplaces.

While the concept of sharing focuses on joint ownership (Belk 2007), gift giving focuses on giving, receiving, and repayment among mutual parties (Mauss 1925, in Gielsler 2006), as well as exchanges between consumers at swap meets (Belk et al. 1988), we extend the boundary of alternative giving to include multiple givers and recipients. As Figure 1 demonstrates, the participants can join in an alternative giving community as givers, recipients, or both. They have freedom to bring items or to bring nothing at all to the community, and to leave the community with something or nothing.

**Figure 1**

How Participants\* Engage in an Alternative Giving Community



\* Participants can be givers and/or recipients.

To reassess participants' motives to engage in such communities, an ethnographical approach was utilized to first explore the subgroups of the Really Really Free Market (RRFM). RRFM was created for people to gather together and to recycle their pre-owned goods in consumer actions which have been suggested to be related to recent consumer research streams such as anti-consumption (Cherrier 2009) and voluntary simplicity (Etzioni 2009). In this research, we work to determine if individuals are indeed motivated to participate in such behaviors by social ends, anti-materialism desires or anti-consumption motives. Based on purposive and convenient sampling, we attended monthly RRFM events in a southeastern city from March 2011 to January 2012. The data was collected via

triangulation of field observations, informal interviews and content analysis of Facebook posts. Six main themes of consumer motivation emerged in the field study: (1) “alternative giving” that highlights the cycle of giving and taking among different givers and recipients, especially to pass on to next generations of users; (2) “anti-consumption” described as some participants embracing downsizing and simplicity; (3) “creativity of recycling” which leads to multiple usages of a good; (4) “social ends” where some are aware of their contributions to the environment; (5) “utilitarian needs” and (6) “hedonic needs” that categorize participants’ motivations according to basic physiological needs and wants and social needs.

To further explore and clarify the motives we derived from the face-to-face event, in the second part of this study, we conducted a content analysis of the online posts of Freecycle.org, which is a large online site with similar goals as the RRFM face-to-face community. We worked to discover and explore the emerging themes and to further understand the main drivers of non-monetary consumer behavior in a broader context. Rather than conducting interviews with a few selected samples, we independently coded 1,295 posts of Freecycle.org within a southeastern area during September 10, 2012 and March 10, 2013. From the 225 posts of “offers” and 1,070 posts of “wants”, we found three additional themes besides the six themes developed in the RRFM study (see Table 1). “Ownership repurposing” is stated as switching ownership in which givers suggest potential users or usage to encourage the pass-on, while recipients remind people of donating their unwanted goods. An additional theme which emerged was that of “changes in life stages” when participants go through changes in their lives such as getting new jobs, moving to new apartments, and having new-born babies. Moreover, a few participants asked for “monetary exchange” in the non-monetary context. The numbers of nine themes in both posts of consumers offering goods and posts of consumers wanting goods were counted to determine the main motivations for participating in alternative giving communities.

**Table 1**  
Summary of Themes in Freecycle.Org (*in Percentage*)

<b>Posts of consumers <u>offering</u> goods</b>		<b>Posts of Consumers <u>wanting</u> goods</b>	
<i>Theme</i>	<i>Occurrences</i>	<i>Theme</i>	<i>Occurrences</i>
Alternative Giving	2.3	Alternative Giving	2.6
Anti-Consumption	0.8	Anti-Consumption	0.6
Creativity of Recycling	3.1	Creativity of Recycling	6.4
Social Ends	0	Social Ends	1.3
Utilitarian Needs	71.1	Utilitarian Needs	40.7
Hedonic Needs	12.1	Hedonic Needs	14.7
Ownership Repurposing	9.0	Ownership Repurposing	25.1
Changes in Life Stages	1.6	Changes in Life Stages	6.4
Monetary Exchange	0	Monetary Exchange	2.3

Building on the two studies, we compare the similarities and differences between the face-to-face RRFM and the online Freecycle.org. Our results indicate that the motivations of both givers (71.1% in Utilitarian Needs and 12.1% in Hedonic Needs) and recipients (40.7% in Utilitarian Needs and in 14.7% Hedonic Needs) still stem primarily from basic consumer needs and wants. As such, in contradiction with the presumed norms in collaborative consumption that societal concerns matter or that anti-consumption motives are the underlying reasons behind these alternative-giving communities, we argue that the participants’ engagement in such communities is mainly driven by fundamental consumer needs and wants, much like any other traditional consumer behavior.

In further analyses, we group products into 12 utilitarian (furniture, electronics, transportation, kitchen & appliances, office & media, and household stuff) and hedonic categories (clothing, crafts, sports & activities, pets, baby stuff, and home remodeling & outdoor

gardening). The participants' primary motivations are observed to be in line with utilitarian and hedonic products in the market. Givers with utilitarian motivations tend to give away more utilitarian goods (70%) compared to hedonic goods (30%). Similarly, givers having hedonic needs generally offer more hedonic (87%) rather than utilitarian goods (13%). This is also true for recipients. However, an inconsistency in product category emerges between givers and recipients. For instance, product categories such as office & media (10.5% vs. 5.4%), pets (5.5% vs. 2.8%), and household stuff (9.5% vs. 4.5%) are overly offered than wanted (see Table 2). On the contrary, the supply of furniture (16.4% vs. 22.2%), transportation (1.4% vs. 6.0%), and sports & activities (3.2% vs. 8.5%) cannot meet the demand.

**Table 2**

Summary of Product Category in Freecycle.Org (*in Percentage*)

<b>Posts of consumers offering goods</b>		<b>Posts of Consumers wanting goods</b>	
<i>Product Category</i>	<i>Occurrences</i>	<i>Product Category</i>	<i>Occurrences</i>
Clothing	8.6	Clothing	7.3
Furniture	16.4	Furniture	22.2
Electronics	13.2	Electronics	10.5
Transportation	1.4	Transportation	6.0
Kitchen & Appliances	10.0	Kitchen & Appliances	10.3
Crafts	4.1	Crafts	5.0
Sports & Activities	3.2	Sports & Activities	8.5
Pets	5.5	Pets	2.8
Baby Stuff	9.1	Baby Stuff	10.0
Office & Media	10.5	Office & Media	5.4
Home Remodeling & Outdoor		Home Remodeling & Outdoor	
Gardening	8.6	Gardening	7.6
Other Household Stuff	9.5	Other Household Stuff	4.5

Our findings suggest implications for reevaluating motives surrounding participation in collaborative consumption research such that consumer welfare always starts with consumers' basic needs. Policy makers and businesses are encouraged to enhance consumers' adoption of recycling and alternative giving activities by not focusing on the anti-materialism or social ends messages but rather focusing on the capability to fulfill basic needs and wants in a free market space. A good understanding of the participants' two primary motives also leads to the recycling of corresponding utilitarian and hedonic products in a sustainable market. Finally, the supply-demand discrepancies in product category have been found to appear in such communities; and this suggests that the practitioners should take timely action and cope with the matter of matching the supply and demand for the market sustainability.

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***When Spendthrifts Become Tightwads***

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Spendthrifts are assumed to spend more than tightwads (Rick, Cryder, & Loewenstein, 2008). The current paper investigates whether

(lack of) autonomy moderates the impact of a spendthrift-tightwad disposition on spending. We show that lack of autonomy may cause spendthrifts to spend as little as or less than tightwads.

Normatively speaking, consumers buy a product if the benefits of ownership exceed the amount of future pleasure that must be forgone. Yet, opportunity costs are not always spontaneously considered (Frederick et al., 2009). Instead, consumers rely on the emotions that the prospect of spending elicits (Prelec & Loewenstein, 1998). Spending is deterred when one anticipates a lot of pain of paying.

Individuals differ in their chronic tendency to experience pain of paying (Rick et al., 2008). Tightwads are more prone to feel pain of paying than spendthrifts. Consequently, the former generally spend less than the latter. Yet, there is reason to believe that this steady difference could change when freedom of spending is restricted.

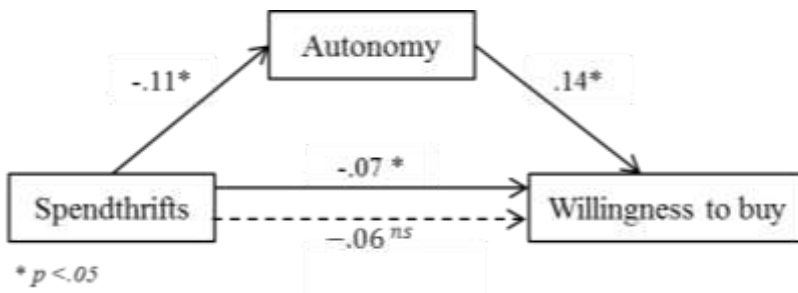
Prior research suggests that acting freely and autonomously is an important part of a spendthrifts' lifestyle. Spendthrifts are known to engage in impulsive purchase behavior (Rick et al., 2008). Such kind of purchases are unintentionally, unplanned (Baumeister, 2002) and mirror a free, unreflective desire to buy without thoughtful considerations (Vohs & Faber, 2007). In general, impulse-ridden individuals enjoy acting spontaneously and prefer to play things by ear (Patrick, Curtin, & Tellegen, 2002). Indeed, psychologically independent individuals spend money more impulsively (Zhang & Shrum, 2009). These findings suggest that spendthrifts' unconstrained spending-pattern reflects a more profound preference to behave autonomously. Given spendthrifts' potential preference for autonomy, we hypothesize that spendthrifts will spend less when lacking autonomy. Refraining from spending could mirror a form of psychological reactance against a lack of freedom (cf. Brehm, 1966; Clee & Wicklund, 1980).

Tightwads judiciously allocate their money. Their spending behavior is disciplined and they often question their own expenses (Lastovicka et al., 1999). Tightwads are planners (Lynch et al., 2010) and believe that money protects them against uncertainties (Rose & Orr, 2007). Generally, tightwads only spend money when they have no choice but to do it. Given tightwads tendency to primarily buy what they need and their conformance to (self-)imposed spending-rules; we hypothesize that spendthrifts' spending habits will not change when lacking autonomy.

Study 1 (N = 98) investigates the impact of lack of autonomy on spending. We asked how likely the respondents would buy (1 definitely not; 7 definitely will) several additional practical products ( $\alpha = .70$ ; e.g. helmet, pump ...) when unavoidably having to purchase a bike to solve transportation-problems and the respondents indicated how much this would restrict their autonomy (1 totally forced; 7 totally free). The degree of tightwad-spendthrift was also measured (Rick et al., 2008).

Spendthrifts experienced less autonomy and consequently exhibited a lower willingness to buy (graph 1). Spendthrifts' lower likelihood to spend money is fully mediated by a subjective lack of autonomy (Preacher & Hayes, 2008: 5000 resamples, 95%CI: LL -.0434; UL -.0009).

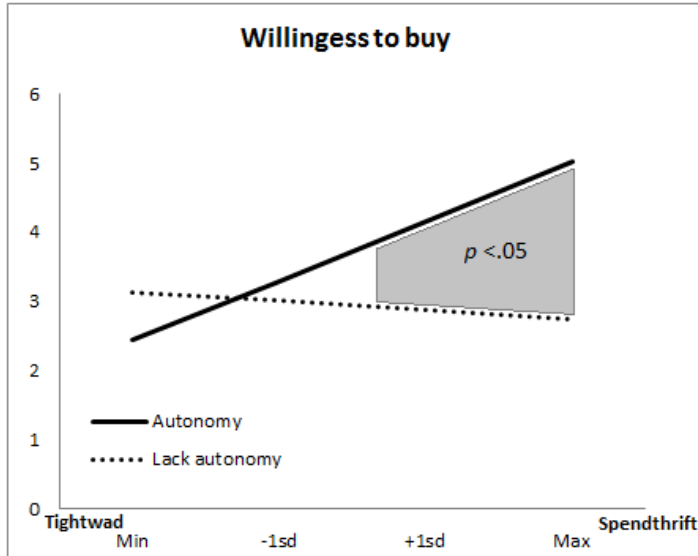
Graph 1: Mediation analysis



In a second study (N=87) we tested whether spendthrifts spend less (more) when they experience less (more) autonomy. All participants imagined that they were moving to a new house and were replacing their washing machine either because their previous one unexpectedly broke down while moving or because they wanted a new one that nicely fits in their new house. The unexpected breakdown of an appliance should reduce consumers' freedom as they are forced to buy a new one. Pretests confirm our manipulation. After reading the scenario we asked how likely they would buy several warranties ( $\alpha = .87$ ; e.g. power supply burnout, total home warranty service ...) to protect themselves against the risk of unexpected breakdowns (1 definitely will not; 7 definitely will). Again, we measured the degree of tightwad-spendthrift tendencies.

Most noteworthy is the significant interaction (graph 2;  $F(1,86)=6.09, p<.05$ ) between tightwad-spendthrift and (lack of) autonomy on the purchase likelihood of warranties. Interestingly, spendthrifts' spending behavior did not differ from the one of tightwads at low levels of autonomy ( $\beta=-.02; t(86) = -0.46, p=.65$ ). However, experiencing autonomy did facilitate spending for spendthrifts more than for tightwads ( $\beta=.16; t(86)=3.01, p<.01$ ).

Graph 2: Autonomy\*Spendthrifts



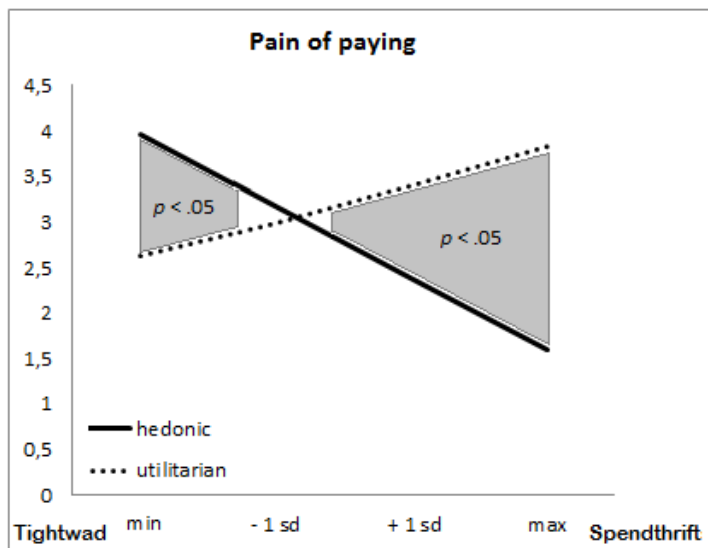
Johson-Neyman analysis shows that respondents scoring at least 14.49 on the TS-scale were more likely to spend money on the warranties only when experiencing autonomy.

Consequently, study 2 confirms that lacking autonomy inhibits spendthrifts' willingness to buy.

Study 3 (N=159) tests whether spendthrifts experience more pain of paying than tightwads in a utilitarian purchase situation. Utilitarian purchases evoke less autonomy than hedonic ones (Botti & McGill, 2011). The respondents imagined buying a bike for hedonic (practice beloved hobby) or utilitarian (commute) purposes. The scenarios were pretested. Afterwards we asked how much pain of paying they would experience making this purchase (1 not at all painful; 7 very painful). Most decisively, spendthrifts' pain of paying is moderated by a hedonic versus utilitarian purchase motivation (graph 3;  $F(1,158)=12.54, p<.001$ ). Utilitarian purchases evoke more pain of paying for spendthrifts than for tightwads ( $\beta=.07; t(158)= -3.22, p<.01$ ). Hedonic purchases evoke less pain of paying for spendthrifts than for tightwads, with marginal levels of significance ( $\beta= -.13; t(158)=1.77, p=.07$ ). Most importantly, and consistent with our predictions, a Johson-Neyman analysis reveals that respondents scoring high ( $>14.73$ ) on the TS-scale anticipated more pain of paying for the utilitarian than for hedonic purchase. Participants scoring low ( $<9.31$ ) on the TS-scale experienced more pain of paying for hedonic purchases than for utilitarian ones.

In sum, these results confirm that spendthrifts experience more pain of paying than tightwads when lacking autonomy (i.e. utilitarian versus hedonic purchases). Paradoxically, spendthrifts can sometimes experience more pain of paying than tightwads.

Graph 3: Hedonic vs. Utilitarian\*Spendthrifts



Summing up, our studies demonstrate that spendthrifts exhibit a lower or equally low willingness to buy than/as tightwads. Counter-intuitively, spendthrifts sometimes experience more pain of paying. Future research aims to demonstrate that spendthrifts also spend less money than tightwads in real spending contexts.

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## **Conversations: The Consequences of Dishonest & Unethical Business Practices**

**Discussion Leader:** Robert Cialdini, Arizona State University

## AWARDS AND BUSINESS LUNCHEON

12:30pm-2:00pm

Ballroom

## SESSION 7

2:15pm - 3:30pm

### ***Symposium: Using Neuroimaging to Predict Population-level Consumer Behavior***

**Chair:** Alexander Genevsky, Stanford University, USA

Carolyn Yoon, University of Michigan, USA

#### ***Brain Responses to Movie-trailers Predict Individual Preferences for Movies and Their Population-wide Commercial Success***

Maarten Boksem, Rotterdam School of Management, Erasmus University, Netherlands\*

Vincent Schoots, Rotterdam School of Management, Erasmus University, Netherlands

Alan Sanfey, Donders Institute for Brain, Cognition & Behaviour and Behavioural Science Institute, Radboud University, Netherlands; Department of Psychology, University of Arizona

Ale Smidts, Rotterdam School of Management, Erasmus University, Netherlands

Consumer neuroscience, applying neuroscience methods to marketing, has gained considerable popularity in recent years amongst scholars and practitioners alike (Smidts et al., 2014). As noted by Ariely & Berns (2010), there appear to be good reasons for this enthusiasm. First, because brain data are considered to be less noisy than data obtained through conventional marketing methods, it is thought that data from smaller samples can generate more accurate predictions, making neuroscience methods cheaper and faster than traditional methods. Second, it is believed that neuroimaging methods could provide marketers with information that is not obtainable through conventional marketing methods. This idea is based on the assumption that people cannot fully articulate their preferences when asked to express them explicitly, and that consumers' brains contain hidden information about their true preferences.

Indeed, several decades of research have shown that many important mental processes occur below the surface of consciousness (Dijksterhuis, 2004), leaving people very limited in their ability to predict their own future behaviour and to accurately identify their internal mental states through verbal or written self-reports (Nisbett & Wilson, 1977). Thus, suffering from such biases, traditional approaches to marketing may indeed provide data that are not very accurate (Griffin & Hauser, 1993). But can neuroscientific measurements provide less biased data?

Evidence from neuroscience suggests that particularly the ventro-medial aspect of the prefrontal cortex (vmPFC) is implicated in implicit valuation and processing implicit preferences and goals, independent of conscious awareness (Hare, Malmaud, & Rangel, 2011; Levy, Lazzaro, Rutledge, & Glimcher, 2011). Importantly, these neural indicators of implicit preference have been shown to be predictive of the actual choices individuals make (Falk, Berkman, Whalen, & Lieberman, 2011). Moreover, activity in the vmPFC in response to products or advertisements in a small sample of subjects (i.e., 'neural focus group') has been shown to be predictive of population-wide commercial success (Berns & Moore, 2012; Falk, Berkman, & Lieberman, 2012). Thus, there appears to be good evidence that neuroimaging methods can provide marketers with information not obtainable through conventional marketing methods, that neural markers can be reliably obtained from a relatively small sample of subjects, and that these neural markers are predictive of commercial success.



However, we also need to acknowledge that traditional self-report measures often perform quite well in predicting preferences and choice. Therefore, we need to show not only that neural measures are predictive of (population) choice, but that these measures can actually be used to improve predictive power in combination with traditional measures. This is what we set out to achieve in the present study.

We obtained both stated preference measures and neural measures in response to advertisements for commercially released movies (i.e., movie trailers). These movie trailers are of crucial importance for a movie's success: having seen the trailer is a better predictor of purchase intent than posters and cast interviews (Gazley, Clark, & Sinha, 2011). Therefore, increasing the probability of success by pre-testing and optimizing movie trailers by means of neuroimaging methods could be of great value to the industry. In this study, we investigated the brain response to cinematic trailers using functional magnetic resonance imaging (fMRI) in order to probe its potential to predict individual purchase decisions in our subjects, as well as movie sales in the population at large, above and beyond stated preferences.

Thirty participants viewed cinematic trailers of 18 movies that they had not previously seen, while undergoing fMRI scanning. We collected both individual stated (willingness to pay) and revealed (choose three DVDs to take home) preference measures. In addition, we obtained US Box Office results, and the number of hosting cinemas in the opening week for the 18 movies as a measure of population choice/real-world preference.

The results showed that, among other areas, activity in the ventromedial prefrontal cortex (vmPFC) was significantly related to individual preference, as well as commercial success at the US Box Office. Importantly, we found that, while it is not possible to predict box office returns by simply asking participants how much they would be willing to pay for that movie, vmPFC activity significantly predicted population preference above and beyond these stated preference measures.

These findings suggest that fMRI measures can be used as a neural marker for commercial success. As such, we provide initial evidence that neural activations in response to marketing stimuli are related to real-world outcomes, and that such neural measures significantly add to prediction models of choice behaviour in the population at large compared to those with only stated preference measures.

Further research will be focused on analyzing the dynamic pattern of the neural response in order to detect which ad execution patterns or scenes are particularly predictive of the success of an ad. Such information will be of great value to practitioners when pre-testing and optimizing ads for boosting their effectiveness.

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### ***Predicting Advertising Success: New Insights from Neuroscience and Market Response Modeling***

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Khoi Vo, Center for Neural Decision Making, Fox School of Business, Temple University, USA

Angelika Dimoka, Center for Neural Decision Making, Fox School of Business, Temple University, USA

Russell Winer, Department of Marketing, New York University, USA

Organizations spend millions on advertisements and are always seeking the key drivers of advertising success. While traditional advertising research has focused on rational and conscious processes through consumer self-reports, recent advances in

neuromarketing methods emphasize the importance of understanding the role of emotions and non-conscious processes. Here, we seek to systematically evaluate the role of different methodologies in predicting the effectiveness of commercials (measured using market response models).

This study consisted of four phases, each phase comprising of different methodologies: a) Traditional self-report and implicit measures (N=186, 86 females, mean age = 39.38); b) Eye tracking and biometric measures (N=29, 11 females, mean age = 33.2); c) EEG (N=29, 15 females, mean age = 25.4) and d) fMRI (N=33, 15 females, mean age = 29.2). All participants completed a pre-screening questionnaire to assess familiarity with ads used in the study. During all phases, participants watched 37 TV ads that had first aired at least two years prior to the study. They also answered questions about familiarity, liking and purchase intent following each ad. Recall and recognition tests were administered at the end of the study. We aggregated data across the entire duration (30 seconds) of the ad for all neurophysiological methods.

We also acquired sales and GRP data for 26 of the 37 ads that were tested. Given differences in industry types and data availability, we sought a measure of response that would be comparable across the different companies and product categories. We used “Advertising elasticity”, which represents percentage change in sales due to a one percent change in the advertising measure being utilized (e.g., expenditures, Gross Ratings Points). Using factor analyses and apriori hypotheses, we restricted the number of independent variables to 16 (Traditional: ad likability, change in purchase intent, recognition, and commercial familiarity; Eye-tracking: number and % of valid fixations; Biometrics: SCR, heart rate deceleration and breaths per minute; EEG: ratio of occipital alpha and frontal asymmetry; fMRI: activation in amygdala, ventral striatum, vmPFC and dlPFC). We tried to then see which of these measures predicted variability in the advertising elasticities.

We first looked at relationships between the various neurophysiological and self-report measures. We found that heart rate deceleration correlated with liking ( $r=.37$ ,  $p<.05$ ), recognition ( $r=.34$ ,  $p<.05$ ) and change in purchase intent ( $r=.46$ ,  $p<.01$ ). Among the various eye-tracking variables, we found that the percentage of valid fixations was significantly correlated with liking ( $r=.38$ ,  $p<.05$ ), consistent with the fact that ads that were liked were associated with increased attention and processing. We did not find any significant correlations between skin conductance responses and self-report measures. In terms of fMRI analysis, we tried to predict self-report measures that were aggregated for each of the ads across participants from all four phases. We found that activation in right amygdala and dorsolateral prefrontal cortex significantly predicted “out-of-sample” liking measures for each ad. We also found that activation in the ventromedial prefrontal cortex predicted purchase intent for the products featured in the ad.

We next sought to investigate which of the set of measures best explains the variation in advertising elasticities beyond traditional measures. To assess this, we included measures from each of the methodologies with the traditional measures and company dummies in separate regressions (due to statistical power limitations). We then conducted an F-test and assessed whether each method adds a significant explanatory power after controlling for the traditional measures. We found that once we control for traditional measures, only fMRI measures were significant ( $p<.011$ ) predictors of ad elasticities. Specifically, we found that activation in the ventral striatum has a significant and positive impact in predicting advertising elasticities. To test whether some of the other methods explain the same variance as traditional measures, we ran additional regressions with each of the sets of methods in isolation, without controlling for traditional measures. We found that eye tracking and EEG measures were moderate predictors of ad elasticities, suggesting that these methods could potentially explain much of the same variance in ad elasticities as the traditional self-reported measures.

Our findings clearly demonstrate the potential of neurophysiological measures to complement traditional measures in improving the predictive power of advertising success models. This study also demonstrates the potential of neuroscience applied to marketing research and practice, by extending existing measures, helping enrich marketing theories, and improving models of marketing success.

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***Adolescent Drivers: How Brains Interact with Peer Norms to Predict Risk-taking***

Christopher Cascio, Annenberg School for Communication University of Pennsylvania, USA\*

Emily Falk, Annenberg School for Communication University of Pennsylvania, USA

How can we leverage neuroscience techniques to understand population level data? One way in which this can be accomplished is through sampling. Neuroimaging studies often rely on convenience sampling, however sampling participants from the larger population of interest can allow for more accurate insight into the neural processes being studied. In addition, using samples from the larger population of interest can allow researchers to use neural data in conjunction with data collected using other methodologies to predict real-world behaviors. The aim of the current study was to examine how contextual and individual difference factors lead to variability in susceptibility to social influence and risk-taking in adolescence. Social influence affects our behavior throughout life, however this is especially apparent between peers during adolescence. Conforming to social influences can affect adolescent's behavior in a variety of ways, from the type of clothes they wear to the music they prefer. However, susceptibility to social influence affects more than purchasing decisions, it can also lead to risky behaviors, such as adolescent drug use, risky sexual behaviors, and risky driving, which is the leading cause of injury and death among teens in the United States. Major risk factors for injury and death in the driving context are being recently licensed, being male, and driving with peers. Therefore, the present study examined how experimentally manipulated social-situational characteristics moderate the relationship between individual differences in neural responses during a baseline cognitive control task and risk-taking in a later driving context. A growing body of neuroimaging studies has begun to examine the neural systems implicated in adolescent risk-taking and susceptibility to peer influence. However, we still know relatively little about how neural systems interact with social variables relevant to risk-taking during adolescence. Elucidating the relationships between these neural and social context variables in predicting risky driving behaviors in adolescence will provide insight into basic theoretical questions regarding social influence, provide insight into why novice male adolescents take more risks while driving in the presence of a peer, as well as suggest potential strategies at the population level for more efficient interventions, programs, and policies aimed to decrease teen driving-related mortality.

Forty-three adolescent males between the ages of 16 and 17 who obtained a drivers license within the past 4-9 months were recruited through the Michigan state driver registry database as part of a larger multi-study project examining adolescent driving behavior and susceptibility to peer influence. Participants were part of a sample from the southeastern Michigan region that fit the highest driving risk demographic, inexperienced male drivers. Participants completed an fMRI session in which neural activity in the hypothesized response inhibition network (right inferior frontal gyrus (rIFG) and basal ganglia (BG)) was measured during a response inhibition task (go/no-go), followed by a separate driving simulator session one week later where participants drove alone and with a peer who was randomly assigned to express risk promoting or risk averse social norms. The use of driving simulators has been shown to provide an externally valid measure of driving behavior without the risks associated with manipulating the context in real-world driving. Driving simulators offer the advantage of maintaining a high degree of control over confounding variables that normally occur in real-world driving while allowing for risk scenario control, including manipulation of social variables such as the behavior of passengers. Thus, combining data obtained in a neuroimaging context during a basic response inhibition task with risk-taking data collected in a driving simulator one week later offers a unique way to study the interaction between basic cognitive control processes in the brain and social context variables on risk-taking, while maintaining both a high degree of experimental control and external validity, but not subjecting participants to actual danger.

Overall, the interaction between the response inhibition network (BG and rIFG) and passenger type significantly predicted the proportion of intersections for which participants drove through red lights while in the presence of a peer, controlling for drive order, behavior during the solo drive, self-reported susceptibility to peer pressure, and the percent of successful no-go trials,  $p=.016$ . To further investigate the simple effects of the response inhibition network, simple slopes were analyzed by passenger type (cautious and risky). Activation in the response inhibition network significantly predicted driving risk in the presence of a cautious peer, controlling for drive order, behavior during the solo drive, self-reported susceptibility to peer pressure, and the percent of successful no-go trials,  $p=.011$ . In contrast, activation in the response inhibition network did not significantly predict driving risk in the presence of a risky peer, controlling for drive order, behavior during the solo drive, self-reported susceptibility to peer pressure, and the percent of successful no-go trials,  $p=.297$ .

The present study examined the relationship between individual differences in neural activity during a laboratory response inhibition task, peer norms, and risk-taking in a driving context among adolescent males. Our results suggest that adolescents showing stronger activation in brain regions linked to response inhibition demonstrate safer driving behaviors in the presence of a cautious peer, but not in the presence of a risky peer. These results add evidence to the idea that interventions, programs, and policies aimed at addressing basic cognitive control in teens must also account for more complex social variables. For example, response inhibition resources may help in effectively buffering risky decision-making among adolescents while they are in the presence of peers, but may be most effective in the presence of larger normative shifts away from risky behavior. In addition, interventions may try to teach adolescents to better recognize social cues that lead to emotionally driven risk-taking, which may allow adolescents to more consciously engage cognitive control resources in situations where risk-taking is possible. Overall, these results add evidence for a more complex picture of human brain development, wherein adolescents' cognitive control systems may interact with social cues to predict complex, real-world behaviors. Finally, by sampling from the larger population results from the current study provide an example of how neuroscience can be leveraged to enhance our understanding of behaviors at the population level.

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### ***Using Neural Activity to Predict Population-level Prosocial Lending***

Alexander Genevsky, Psychology and Neuroscience, Stanford University, USA\*

Brian Knutson, Psychology and Neuroscience, Stanford University, USA

Neuroscientific research has identified neural predictors of charitable giving, but has not established whether similar mechanisms extend to real-world scenarios involving significant financial incentives, such as prosocial lending opportunities afforded by microloans. Here, we examined how features of microloan requests, identified in an independent neuroimaging task, influence funding outcomes in a large real-world internet dataset. As hypothesized from our neuroimaging analyses, positive (but not negative) affective impact of microloan request features (i.e., pictures but not text) predicted both loan funding rate and outcome. These results highlight the potential for neuropsychological findings to scale to the aggregate level, and have implications not only for theories about what motivates prosocial lending, but also for the practice of constructing compelling and effective funding requests.

In order to explore the influence of the features of charitable requests we ran an fMRI study ( $n=22$ ) to examine the neural predictors of giving. Prior to the study, subjects were given a monetary endowment from which they could choose to donate on each trial of the experiment (one of which would be randomly selected to count "for real"). During each trial subjects sequentially saw either a photograph or silhouette of an African orphan, an amount for the requested donation, and made a choice whether or not to donate. We found that merely viewing a photograph increased peoples' willingness to donate by about 50%. This increase in giving was

associated with — and statistically mediated by — self-reported ratings of positive, rather than negative, arousal in response to the photographs. Further, we found that although a number of neural regions were responsive to the photograph vs. silhouette contrast, only the nucleus accumbens (NAcc), an area associated with positive affect, significantly predicted (and mediated) eventual decisions to give.

To address whether these affective features of appeals could increase real-world giving in a manner consistent with our neuroimaging findings, we explored a large-scale internet data source from a microloan website ( $n=13,500$ ). We acquired extensive data on microloan funding from Kiva Microfunds ([www.kiva.org](http://www.kiva.org)), an internet-based international micro-finance organization. To operationally define loan success as an outcome measure, we focused on eventual loan outcome (i.e. funded or not) as well as loan funding rate (i.e. dollars raised per hour) for each loan request. Building on our neuroimaging findings, we aimed to examine the affective impact of different components of loan requests on loan success, while controlling for objective loan details. Two elements of loan requests were identified as having potential affective impact: (1) the text description which introduces the borrower and describes their individual circumstances and need, and (2) a photograph of the borrower which is prominently displayed at the top of each loan request.

As predicted based on our neuroimaging results, we find that photographs promote microloan success through their positive rather than negative affective impact. Interestingly, neither positive nor negative affective words in the text predicted funding rate or outcome. Other, potentially relevant loan features (including description length and amount requested) also did not predict loan success. We further explored the ability of affective features to predict loan outcomes with classification analyses. Prediction accuracy for the affective features identified in our neuroimaging study were significant, indicating that the presence of these features alone could predict loan success.

Beyond testing neuroscientific accounts of the impact of affect on giving, we also aimed to assess the economic significance of these effects. Thus, we conducted both descriptive and projective analyses to assess the economic impact of photographic positive affect in the Kiva dataset, and extrapolate those economic consequences to other philanthropic organizations. Photographs in the top decile of positive arousal ratings were funded at 12.9% more per hour than those in the lowest decile. The slope of the linear effect of photograph positive arousal on funding rate suggests that a single unit increase in positive arousal is associated with a 1.9% increase in funding rate per hour. By comparison, a \$100 unit decrease in requested loan amount results only in a \$0.19 increase in funding rate. These findings have actionable implications, since the cost of modifying an expression in a photograph is negligible, and yet could result in economically significant increased funding rate and probability.

In this study, we extrapolated a neurally-inspired account of giving to predict microloan funding success. The impact of positive affect suggested by previous neuroimaging experiments thus scales to the real world, with both statistically and economically significant effects. Beyond the theoretical implications of these results, the findings suggest that neuroimaging research can inform predictions about real-world behavior at the aggregate scale. Practically, the findings imply that simple modifications of subjective features of funding requests (e.g., facial expressions) may have a surprisingly powerful impact relative to changes in more objective incentives.

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## ***Symposium: New Answers to an Old Question: Emerging Research on the Determinants of Elaboration***

**Chair:** Ryan Rahinel, University of Cincinnati, USA

### *Environmental Structure Stimulates Elaborative Thought*

Ryan Rahinel, University of Cincinnati, USA\*

Nelson Amaral, American University, USA

Aaron Kay, Duke University, USA

Given the importance of elaboration in attitude formation as well as evaluative judgments more broadly, there has been a wealth of research on contextual factors that motivate one to engage in more or less elaborative thought. Perhaps the most well-known is that of personal relevance, as people tend to engage in more elaboration of messages of high (vs. low) personal relevance (Johnson and Eagly 1989; Petty and Cacioppo 1990). Additionally, social factors such as anticipated interaction (Chaiken, 1980) and social agreement (Baker and Petty 1994) also seem to affect one's motivation to elaborate upon a message. However, despite the clear variety in such factors (e.g., from social to situational), they share a common aspect in that their effect on elaboration occurs through some relationship with the focal message.

In this work, we propose that a fundamental aspect of the broader environment – structure – can similarly stimulate elaborative processes. By structure, we are referring to one's perceptions of the environment as having reliable patterns that can be understood to predict when and how events will occur (Kay et al., 2014; Neuberg and Newsom 1993). We theorize that such environments cue a general correspondence between effort expenditures and the realization of desired outcomes, since one can capitalize on environmental structure through investments in foresight and effort, whereas such investments might be lost to random factors in an unstructured environment. Recent work hints this to be true, as Kay et al. (2014) found that reminders of structure motivated action towards long-term goals. In this work, we test a broader conceptualization of the framework in Kay et al. (2014) by expanding it to a context – elaborative thought – that importantly (1) contains no physical actions and (2) occurs in the absence of salient long-term goals. Furthermore, in terms of elaboration, it represents a contextual factor with no clear relationship to the focal message. Across three studies, we test the hypothesis that reminders of structure lead to greater elaboration.

In the first study, 199 students were assigned to a structure, no structure, or baseline condition, which was manipulated via materials adapted from Kay et al. (2014). In the structure condition, participants read an article that describes trees as growing leaves and branches via a system of patterns, symmetry, and identifiable relationships. In the no-structure condition, participants read that trees grow leaves and branches in a random, haphazard, and unsystematic way. In the baseline condition, participants read about the role of trees in the world without any mention of the presence or absence of structure. After reading the story, participants were asked to imagine that they were choosing between two brands of popcorn for a party, and that they would be seeing ads for each brand. One of the ads was for an option that was dominant on central-cue features, such as ingredients and texture, but dominated by the other option on a peripheral-cue feature – the endorser, who was unknown. The other ad was for an option with the opposite profile, as it was dominated on central-cue features, but had an endorser – George Clooney – who was well known. We then measured people's choice between the options, their relative preference between them, and their attitudes toward each. In this and all other studies, we control for chronic elaborative tendencies by measuring rational processing (Pacini and Epstein 1999).

Consistent with past ELM-based findings showing that greater elaboration leads to greater reliance on central (vs. peripheral) cues, we found that people in the structure condition were more likely to choose the central-dominant option (82.81% vs. 65.67%,  $\chi^2(1) = 5.00$ ,  $p < .03$ ), prefer it (Ms 67.65 vs. 58.86,  $t(128) = 2.13$ ,  $p < .04$ ), and show higher relative attitudes to it (Ms 1.28 vs. .40,  $t(128) = 2.87$ ,  $p < .01$ ). Means for the baseline condition were similar to those of the no-structure condition, therefore demonstrating that the effect was driven by the presence of structure.

In the second study, we examined the effect in a choice confidence context, since greater elaboration on one's choice should lead to greater certainty. Ninety-two participants completed the same structure vs. no-structure manipulation as in the first study. They were then asked to indicate a hypothetical choice between six small gifts (e.g., an LED pen, voice recorder pen, etc.). We then measured their confidence in their choice, the ease of choice, and the similarity and substitutability of the options. Finally, participants indicated how much they elaborated on the choice and completed the rational processing scale. Consistent with our framework, a mediation analysis showed that reminders of structure led to greater elaboration, and subsequently, a more confident choice (indirect effect  $b = .1180$ , LLCI = .0089, ULCI = .3106). Structure had no effect on the other measures.

In the final study, 161 participants from Amazon mTurk completed the same structure vs. no-structure manipulation as in studies 1 and 2, and then indicated their preference between the same two options in study 1. To test our proposed mechanism (contingency beliefs) via moderation, we asked participants to indicate their agreement with the statement "careful analysis of current situations can predict the future", and finally, respond to the rational processing scale. Consistent with our framework, those scoring low on this measure replicated the effect of structure on preference for the central-dominant option ( $M_{\text{Structure}} = 77.86$  vs.  $M_{\text{No.Structure}} = 64.90$ ,  $t(156) = 2.13$ ,  $p < .04$ ), while those scoring high on the measure did not show the effect ( $M_{\text{Structure}} = 69.17$  vs.  $M_{\text{No.Structure}} = 76.17$ ,  $t(156) = -1.17$ ,  $p > .24$ ). Looking at this interaction the other way, contingency beliefs had a positive effect for those in the no-structure condition ( $b = 5.20$ ,  $t(156) = 2.00$ ,  $p < .05$ ), but no effect for those in the structure condition ( $b = -4.01$ ,  $t(156) = -1.33$ ,  $p > .18$ ), since such people presumably believed this anyway. Across the experiments, we find evidence that structure leads to greater elaboration and therefore more certain and central-cue-dominant choices. Process evidence shows that beliefs of a contingency between expended effort and output underlies these results.

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### ***The Influence of Waiting on Preference Polarization***

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From lines in retail stores to Internet-based transactions, consumers are repeatedly exposed to seemingly unavoidable waits. Moreover, a litany of research demonstrates that waiting adversely influences consumers' judgments and purchase intentions. Thus, the experience of waiting presents an enigma to both consumers and marketers alike, as both are motivated to avoid this largely unavoidable experience.

Though the negative consequences of waiting are well-documented, the present research investigates whether the experience of waiting can engender a hidden positive consequence—specifically, heightened preference polarization. We posit that the mere act of waiting can lead consumers to become more polarized (or extreme) in their initial preference. Classic research documents that individuals' induced to reflect on their attitudes become more extreme in their evaluations. Additionally, recent work demonstrates that this polarization is most likely to occur after moderate—rather than brief or extended—reflection, as moderate reflection increases individuals' confidence in the reasons underlying their attitude. Yet it is unclear the extent to which the mere experience of waiting is sufficient to spontaneously stimulate reflection on one's attitude—and, if so, whether different features of the wait experience are more likely to elicit this reflective process?

An initial experiment tested our primary hypothesis that the experience of waiting is sufficient to stimulate preference polarization. To test this hypothesis, participants ( $N = 142$ ) evaluated one of three possible movies. They were then exposed to our wait manipulation, which presented a screen that informed participants “their response was being uploaded to a separate server,” that “the upload would take a moment,” and that “the computer would automatically move them onto the next portion of the survey once the upload was complete.” This screen remained for either a brief (20s), moderate (40s), or extended (60s) wait (exact times were based on pretesting) before again evaluating the same movie. Analysis revealed only a main effect of wait time on preference polarization ( $F(2,133) = 7.52, p = .001$ ), such that a moderate (compared to a brief or extended) wait induced more extreme preferences.

We next sought to offer insight into the process underlying this curvilinear effect of wait time on preference extremity. Recall our hypothesis that, compared to brief and extended wait times, moderate waits should elicit greater confidence in the reasons for individuals’ initial preference. Moreover, this effect should be independent of participant mood or attention as a function of wait time. To test this possibility, participants ( $N = 98$ ) evaluated their currently cable/internet service provider. Following our manipulation of wait time, participants re-evaluated their provider before then reporting (in random order) their level of confidence in the reasons for their preference, their current level of negative affect, and their level of attention thinking about their attitude during the wait experience.

Analysis revealed an effect of wait time on preference polarization ( $F(2,95) = 3.92, p = .023$ ) and thought confidence ( $F(2,95) = 3.44, p = .036$ ), such that a moderate (compared to a brief or extended) wait induced more extreme preferences and more confidence in their reasons for that preference. We also observed an effect of wait time on negative affect ( $F(2,95) = 6.05, p = .003$ ), though participants’ simply became more irritated as wait time increased. We observed no effect of perceived attention ( $F < 1$ ). Finally, analysis of the proposed mediational pathway from wait time to preference polarization through thought confidence (controlling for both negative affect and attention) was significant (95% CI:  $-.50, -.08$ ; see Table 1 for means).

**Table 1.**  
Dependent variables as a function of wait time in Experiment 2.

<i>Dependent Measure</i>	<i>Wait Time</i>		
	20s	40s	60s
Negative Affect	2.49(1.51) <sub>a</sub>	3.54 (2.08) <sub>b</sub>	4.10 (2.28) <sub>c</sub>
Perceived Attention	5.82 (2.39) <sub>a</sub>	5.55 (2.41) <sub>a</sub>	5.74 (2.66) <sub>a</sub>
Preference Polarization	-.08 (.63) <sub>a</sub>	.31 (.81) <sub>b</sub>	-.29 (1.07) <sub>a</sub>
Thought Confidence	7.05 (1.25) <sub>a</sub>	7.69 (.98) <sub>b</sub>	6.87 (1.52) <sub>a</sub>

*NOTE: Subscripts should be interpreted within row only, and means with different subscripts significantly differ. Standard deviations are indicated in parentheses.*

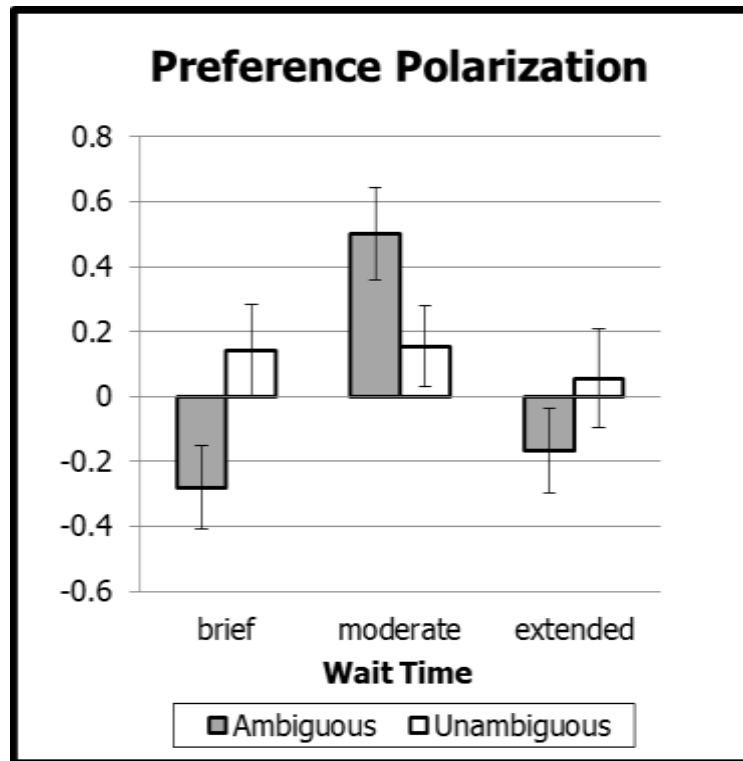
Finally, we explored the type of waiting experiences most likely to elicit the reflective process detailed in the prior experiment. Specifically, we hypothesize that the experience of waiting should be more likely to stimulate reflection on one’s preference when the duration of that wait is ambiguous (as in Experiments 1 and 2), as the feeling of ambiguity—like uncertainty—should increase elaboration. We thus presented participants ( $N = 134$ ) with a comparative choice between two vacation destinations. They indicated their preferred location and were then exposed to a brief, moderate, or extended wait before again indicating their preferred location. Importantly, prior to the wait, participants were either informed or not informed of how long they would be waiting to vary the ambiguity of the wait duration. Analysis revealed a main effect of wait time on preference polarization ( $F(2,128) = 5.52, p = .005$ ) qualified by a wait time  $\times$  context interaction ( $F(2,128) = 4.40, p = .014$ ; see Figure 1). The effect of an *ambiguous* wait time on



preference polarization was significant ( $F(2,66) = 8.55, p < .001$ ), such that a moderate (compared to a brief or extended) wait induced more extreme preferences. There was no effect of *unambiguous* wait time on preference polarization ( $F < 1$ ).

**Figure 1.**

Preference polarization as a function of wait time and context in Experiment 3



Across three experiments, we find support for a curvilinear pattern of preference polarization as a function of wait time. In particular, consumer preferences become more extreme after exposure to a moderate—as opposed to a brief or extended—wait. Additionally, we find that this heightened preference polarization is driven by the *confidence* consumers have in their preference-consistent thoughts (Experiment 2), is independent of any differences in negative affect or attention stemming from different waiting experiences (Experiment 2), and is restricted to waiting contexts that stimulate reflection on one’s thoughts (Experiment 3). Taken together, these findings illustrate a hidden, positive consequence of waiting in the form of preference polarization while offering unique insight into when and how the waiting experience impacts consumers’ preferences.

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***Thought Induced Attitude Depolarization***

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Substantial research on self-generated persuasion has demonstrated that simply thinking about an attitude object can result in more extreme attitudes toward the object (e.g., Tesser, 1978; Tesser, Martin, & Mendolia, 1995). This mere thought effect suggests that

when people think about attitude objects, they generate additional attitude-consistent thoughts leading to greater attitude polarization. Although research in this area has investigated several moderating factors (e.g., Judd & Lusk, 1984; Linville, 1982; Millar & Tesser, 1986; Tesser & Leone, 1977), most of the research looks at constraints that attenuate but not reverse the effect (depolarization). It has been suggested, however, that under some conditions people may generate attitude inconsistent thoughts resulting in a depolarization effect (e.g., Marsh & Wallace, 2005).

This research investigates source effects as a depolarizing variable and two additional moderating variables, need for cognitive closure and information sufficiency. Consumers have many resources for gathering information about products that vary in perceived objectivity. Source effects play an important role in consumer attitude formation and product evaluations and have been shown to operate at varying levels of processing (Kang & Herr, 2006) depending on ability and motivation (e.g., Petty & Cacioppo, 1986). Whether consumers view an ad as informative and accurate or persuasive depends on the ambiguity of the information and the motivation to think about the implications of the ad (Hung & Wyer, 2008). Consumers generally expend little cognitive effort when presented with advertisements (Hung & Wyer, 2008). When people are motivated to consider an advertisement, they are likely to consider that the advertiser's claims are generally exaggerated and designed to persuade (Persuasion Knowledge Model; Friestad & Wright, 1994). As Tormala and Petty (2004) established, under high elaboration conditions, credibility influences persuasion by biasing the nature of thoughts that come to mind.

Both polarization and depolarization effects depend on a consumer's willingness to adjust initial evaluations based on additional information processing. Consequently, both of those effects are likely to be moderated by a consumer's natural tendency to update or modify their initial impressions. That tendency is measured by need for cognitive closure (NFCC) (Kruglanski & Webster, 1996), which refers to a desire to form a definite opinion ("seize") and to maintain the opinion once it is formed ("freeze").

Further, it is possible that enough diagnostic information may override a source effect. The "set-size effect" (Anderson, 1967, 1981; Yamagishi & Hill, 1981, 1983) suggests that as the number of attributes used to describe a person or object increases, the overall evaluation will become more extreme. This implies that perceptions of information sufficiency should attenuate thought-induced attitude change because it should reduce the motivation for further generation of attitude consistent or inconsistent thought.

Experiment 1 investigated source effects in relation to attitude change. Participants were asked to imagine that they were shopping for a new cell phone plan and were provided with a brief description of a plan. Participants were informed that the information was either taken from an advertisement (low credibility) or from an article in Consumer Reports Magazine (high credibility). Participants then rated their attitudes toward the plan. Next, participants were asked to either think about the plan (thought task) or work on a crossword puzzle (distraction task) for 90 seconds. They then rated their attitude toward the plan a second time. A polarization score was computed using the difference between the attitude score at time 1 and time 2. A 2 (thought vs. distraction) X 2 (source credibility) ANOVA revealed a significant two-way interaction ( $F(1, 47) = 9.065, p < .01$ ). As expected, participants in the thinking condition adjusted their attitude from time 1 to time 2, while those in the distraction condition did not. When the source was credible a polarization effect was found ( $M = .306, t(14) = 2.543, p < .05$ ). When the source was less credible, a depolarization effect was found ( $M = -.356, t(11) = 2.030, p = .067$ ).

Experiment 2 further investigated the depolarization effect, while including NFCC as a potential moderator. This study was identical to experiment 1 except only the low credibility source (advertisement) was used, and participants completed the 42-item NFCC scale (Webster & Kruglanski, 1994). A regression analysis revealed a significant two-way interaction ( $\beta = .039, t(67) = 3.401, p < .001$ ). As expected, a depolarization effect was found in the thinking condition, but only when NFCC was low. No change was found in the distraction condition regardless of NFCC.

Experiment 3 extended the findings of experiment 2 by manipulating NFCC while also investigating the potential moderating effect of set-size on polarization. Participants were asked to imagine that they were shopping for a new laptop computer and were presented with a description. They were informed that the information was taken from a recent advertisement. The amount of descriptive information varied (four vs. eight pieces of information). NFCC was manipulated via an accountability manipulation (e.g., Tetlock, 1985). The attitude measure and thought/distraction task were the same as the previous studies. A 2 (thought vs. distraction) X 2 (set size: large vs. small) X 2 (NFCC: high vs. low) ANOVA revealed a significant three-way interaction ( $F(1, 95) = 7.377, p < .01$ ). We found the same depolarization effect in the small set-size condition as in experiment 2. A thought-induced depolarization effect was found but only for those low in NFCC. No change was found in the distraction condition regardless of NFCC. In contrast, we found a marginally significant polarization effect in the large set-size condition. A thought-induced polarization effect was found but only for those low in NFCC. No change was found in the distraction condition regardless of NFCC. Apparently the larger set-size doesn't just attenuate the source effect, but also may reverse it.

This research provides important new insight into self-generated persuasion. Source effects can result in polarization effects if the source is credible but depolarization effects if the source is less credible. Further, thought-induced attitude change depends on varying levels of NFCC and information sufficiency.

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### ***I Believe This Is a Strong-Enough Attitude***

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Dweck, Chiu, and Hong (1995) identify two distinct implicit self-theories—entity vs. incremental theory. People who endorse entity theory (entity theorists) believe that their personal traits (i.e., personality and intelligence) are fixed, while people who endorse incremental theory (incremental theorists) view their personal traits as malleable. This line of research has found that individuals can extend their implicit self-theories to other people and even to brands/products (e.g. Yorkstone, Nunes, and Matta 2010; Park and John 2010). A consistent finding in the attitude literature is that strong attitudes are products of effortful cognitive elaboration (Petty and Cacioppo 1984; Petty and Wegener 1999). Recently, Kwon and Nayakankuppam (forthcoming) suggest that the link between elaboration and attitude strength can be more complicated; they find that elaboration is a sufficient, but not necessary condition for attitude strength. Specifically, they suggest that entity theorists (people who believe that their personal traits are fixed) can form strong attitudes quickly/easily without elaboration, while incremental theorists (people who view their personal traits as malleable) need to elaborate to form strong attitudes.

In this paper, we examine the underlying mechanism of entity theorists' strong attitude formation process without high level of elaboration. We propose that, compared to incremental, entity theorists have lower thresholds to form strong attitudes: in contrast to incremental, entity theorists need smaller amount of information on the target objects when forming strong attitudes.

#### ***Study 1***

Procedure. One hundred seventy nine participants (male = 63.1%, average age = 21.1) were assigned into a 2 (implicit self-theory: entity vs. incremental) by 2 (argument quality: strong vs. weak) between-subject design. After being primed with either implicit

self-theory (Chiu, Hong, and Dweck, 1997), participants were instructed about the dual task experiment: they were told that they were going to complete two different tasks simultaneously. However, they were clearly instructed that one task was more important than the other. Their primary task was to form an attitude towards a fictitious brand based on ten arguments (either strong or weak) shown on a computer screen one at a time. Their secondary task was to simultaneously monitor ten unrelated distracting statements from an audio source.

After the dual task, participants answered true/false questions for every distracting statement (total ten questions), which were used to infer the point at which attention shifted from the primary task to the distractors. We would expect that participants would initially attend to the primary task, which would result in poor memory for the initial distractors. As they became certain about their attitudes, their attention would shift to the distractors, which would result in memory for the distractors improving. Importantly, this was predicted to happen at different points for entity and incremental theorists.

Results. We conducted a 2 (implicit self-theory) X 2 (argument quality: strong vs. weak) X 10 (question number) mixed model analyses on the result of T/F question. A significant three-way interaction ( $\beta = -.162$ ,  $\chi^2 = 12.06$ ,  $p < .001$ ) emerged, along with the two-way interactions of implicit self-theory X question number ( $\beta = .218$ ,  $\chi^2 = 48.94$ ,  $p < .001$ ) and of argument quality X question number ( $\beta = .155$ ,  $\chi^2 = 32.67$ ,  $p < .001$ ). The three-way interaction demonstrated that entity theorists did not differ by argument quality condition ( $\beta = -.009$ ,  $\chi^2 = .04$ , NS), whereas incremental theorists showed different patterns as a function of the argument quality condition ( $\beta = .123$ ,  $\chi^2 = 19.54$ ,  $p < .001$ ). Planned analyses revealed that the percentages of correct answers for the first four (#1, #2, #3, and #4) and the last two (#9, and #10) distracting statements were not significantly different between entity and incremental theorists. The differences were found only in the middle range (#5:  $F(1,119) = 5.00$ ,  $p < .05$ ; #6:  $F(1,119) = 12.69$ ,  $p < .001$ ; #7:  $F(1,119) = 8.35$ ,  $p < .01$ ; #8:  $F(1,119) = 3.29$ ,  $p = .072$ ). These results confirm that entity theorists switched their attentions to the secondary tasks earlier than incremental theorists did. Moreover, incremental theorists who received strong arguments switched attention earlier than those provided weak arguments.

Our data reveal that compared to incremental theorists, entity theorists processed smaller amounts of information in forming and becoming certain (i.e. strong) about their attitudes. In addition, we found that incremental theorists were influenced by the argument quality manipulation evidenced in their performances in the secondary task, whereas entity theorists showed the same pattern of behaviors and consequences across the two argument quality conditions. In other words, there are clear differences in the points at which attentional shifts happened indicating that entity theorists became certain of their attitudes sooner than incremental theorists. Both theorists initially pay attention to the information but entity theorists stop paying attention earlier.

## *Study 2*

Procedure. We examine whether we can still find the threshold difference effect when multiple arguments are presented all together, rather than each argument is presented one by one (Study 1). Participants were first primed with either entity or incremental theory. They were, then, given a print ad displaying 10 persuasive arguments about a new brand and asked to form attitudes towards the brand. Meanwhile, their eye fixations were recorded. To derive dependent measure, we defined 10 rectangular areas of interest (AOI), each of which encompassed each argument.

Results. The results supported our prediction that entity theorists would spend less time than incremental theorists to view the print ad ( $M_{Ent} = 22.29$ ,  $M_{Inc} = 32.55$  seconds,  $F(1, 59) = 10.40$ ,  $p < .005$ ). More importantly, entity theorists fixated on 8.06 AOIs on average, whereas incremental theorist fixated (i.e. processed) 9.59 AOIs ( $F(1,59) = 13.36$ ,  $p < .001$ ). These results illustrate that the threshold difference exists even when arguments are presented all together. More importantly, although entity theorists spent less amount of

time and processed less amount of information, their attitude accessibility (i.e., strength) was higher than incremental theorists' (Ment=1845.74, MInc=2128.21 millisecond,  $F(1,59)=4.883$ ,  $p=.031$ ).

### *Discussion*

The current research shows that an individual's implicit self-theory orientation influences the level of elaboration and the amount of information being used to form attitudes. More importantly, it finds that in contrast to incremental, entity theorists have lower thresholds to form strong attitudes. In other words, entity theorists become certain (i.e., holding it strongly) of their attitudes with less amount of information, with low level of elaboration, than incremental theorists.

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## ***Symposium: Underexplored Levers of Healthy Eating: Dissociative, Perceptual and Sensory Influences on Food Consumption***

**Chair:** Adriana Samper, Arizona State University, USA

### ***The Impact of Forced Dissociation from Beloved Brands on Consumption of Unhealthy and Healthy Foods***

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Obesity rates continue to climb worldwide, leading to costly associated public health problems such as diabetes and heart disease. A large body of research has converged on the conclusion that an obesogenic environment, where inexpensive and palatable calorie-dense foods are nearly ubiquitous and where food marketing is pervasive for unhealthy foods, plays a key role (Mokdad et al., 2003; Wadden, Brownell, & Foster, 2002). However, in many countries, policy makers face significant legal and political barriers to curbing unhealthy food marketing (Mello, Studdert, & Brennan, 2006).

One viable approach policy makers can use is to create an identity-based dissociation (e.g., Berger & Rand, 2008) with loved junk food brands among consumers in an attempt to curb consumption of these foods. However, consumers often develop strong relationships with brands (e.g., Fournier, 1998) and in this case, pushing consumers to dissociate from these brands might deplete self-regulatory resources, thus leading to poorer food choices.

The object of this research is to examine the role of forced dissociation with beloved food brands on consumption attitudes and behaviors among consumers who have relatively strong (vs. weak) brand relationships. In our studies, we manipulate dissociation/association with a beloved brand implicitly. Pre-testing revealed that our study population of university students tended to have strong relationships with the candy brand Reese's. We employed the GNAT (Go-No Go Association Task; Nosek & Banaji, 2001), which allows for implicit or subconscious alteration of participants mental associations. Specifically, participants in the association conditions of our studies had Reese's (target) paired with "Me" (attribute) responses while those in the dissociation conditions had Reese's (target) paired with "Not Me" (attribute) responses. We predict that dissociating from a beloved brand will deplete consumers, leading to poorer food choices.

In a pilot study, 102 undergraduate participants were assigned to one of the two experimental conditions (between subjects design: dissociate vs. associate). Participants first completed the GNAT, followed by a filler task, and then they were offered a healthy snack. Our dependent variable of interest was the amount of the healthy food consumed. Prior research in depletion has utilized “taking one’s medicine” scenarios (e.g., eating unpleasant yet healthy foods). This research attests that eating these foods requires self-regulatory resources (Vohs et al., 2008). Our results provide initial support for the hypothesis that having to dissociate from a beloved brand is depleting: consumers who dissociated from a beloved brand consumed less of the healthy food (Dissociate = 3.9 grams consumed, Associate = 10.2 grams consumed,  $t(100) = 1.72, p = .04$  (one-tailed)). A lingering question is how the strength of one’s brand relationship (strong vs. weak) impacts food choices, which we examine next.

In Study 1, 97 undergraduate participants were assigned to one of the two experimental conditions (between subjects: dissociate vs. associate). Before completing this task, we first measured the extent to which our participants had strong (vs. weak) relationships with our target brand, Reese’s, with the IOS (Inclusion of Other in the Self; Aron et al, 1991) scale. Specifically, participants saw a series of images ranging from depicting the self as far from Reese’s to depicting the self as close to Reese’s and indicated which image best represented their relationship with the brand (Reimann et al. 2012). After the GNAT participants worked on a filler task, then they rated their desire to eat healthy foods (vegetables) on a 7-point scale from “Not at All” to “Very Much”. We predict that those forced to dissociate from Reese’s will find healthy foods less desirable, but that this pattern will be especially pronounced (weak) for those high (low) in IOS, as these individuals will become the most (least) depleted from dissociating from the brand.

Our analysis revealed the predicted IOS x Dissociation/Association interaction,  $F(1,93) = 4.57, p = .04$ . Contrast analysis revealed that among those in the dissociation condition, those high in IOS showed the least desire to consume healthy foods (High IOS = 2.71, Low IOS = 3.74,  $t = 2.04, p < .05$ ). We infer that those high in IOS likely resist the dissociation attempt, thus depleting them and leading to poorer food choices. Further, no such pattern of results emerged for those in the association conditions, as associating with a beloved brand is likely not depleting.

In Study 2, we explore whether dissociation decreases preference for healthy food relative to a control condition. 120 undergraduate students participated in this study. We employed a between subjects design (control vs. dissociation) and measured IOS as in Study 1. In the control condition, participants did a GNAT task irrelevant to the brand, Reese’s. Instead, participants in the control condition had Flowers (target) paired with Good (attribute) responses. Participants completed the IOS measure before engaging in the experimental manipulation. As in Study 1, participants completed a filler task before indicating their desire to eat healthy foods.

Contrast analysis revealed that among those in the dissociation condition, those high in IOS showed the least desire to consume healthy foods (High IOS = 3.44, Low IOS = 4.39,  $t = 1.96, p = .05$ ). No such pattern of results emerged for those in the control conditions as engaging in a neutral task is likely not depleting.

Our research advances theories on depletion by examining the role of brand relationships (high vs. low IOS). Those high (vs. low) in IOS are most likely to experience depletion from a dissociation attempt, presumably because dissociating from a beloved brand leads to counter-arguing and other actions that consume self-regulatory resources.

Understanding how dissociation attempts impact those who have strong (vs. weak) brand relationships is important for policy-makers as well as marketing practitioners. Our research suggests that policy-makers should be cautious when forcing dissociation attempts as such attempts can deplete consumers who have strong relationships with the brand, thus decreasing self-regulatory resources and leading to poorer food (and potentially other) choices.

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## *The Effect of Calorie-Ending and Health Motivation on Consumption Behavior*

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In response to growing obesity rates, policy initiatives to increase consumer awareness of calorie information have gained significant momentum. Since 2008, select states have mandated calorie labels on all restaurant foods (Elbel et al., 2009), and recently, the FDA was charged with requiring calorie information for certain restaurants and vending machines. Prior research has suggested that calorie labelling in menus or fast food displays has limited effectiveness relative to a lack of labeling (Swartz, Braxton, and Viera, 2011). However, there has been little attention paid to ways in which small modifications to calorie information displayed in labels can shape eating behaviors.

In the present research, we draw from work on motivation and nine-ending prices to investigate how minute changes in calorie information can influence eating behaviors. We build upon work examining how consumers are often torn between wanting to eat healthfully and enjoying hedonic foods (Geyskens et al., 2008; Finkelstein & Fishbach, 2010), and suggest this conflict becomes stronger when people are motivated to eat healthy as they feel more guilty about eating high calorie foods. We predict that nine-ending calories can lead to greater consumption because consumers consciously or unconsciously ignore the minimal digits in calorie information when they want to justify eating calorific foods, leading them to perceive indulgent foods to be healthier and reducing anticipated consumption guilt. Ironically, this should be most pronounced for high self-control individuals, who are particularly reliant on anticipated guilt in guiding their behaviors (Tangney et al. 2004).

Studies 1A and 1B established initial evidence for our hypotheses by showing health-motivated consumers perceive nine-ending calorie desserts to be healthier and are more likely to consume them. Both studies had a 2 [calorie-ending: nine-ending (499), round-ending (500)]  $\times$  2 (motivation: health, money) between-subjects design. Health and money motivations were primed with visualization scenarios, and manipulation checks showed that they were successful. After reading the scenario, participants were shown a “menu” with pictures and calorie information (499 vs. 500) for five types of cake.

In Study 1A, 86 respondents were asked how healthy they perceived the desserts to be. A 2x2 ANOVA with motivation and calorie-ending revealed a significant interaction ( $F(1, 82) = 4.10, p = .046, \eta^2 = .048$ ). Nine-ending calorie desserts were perceived to be healthier than round-ending calorie desserts in the health motivation condition ( $F(1,82) = 5.13, p = .026, \eta^2 = .059$ ) but not in the money-motivation condition (*ns*). In Study 1B, 100 respondents were asked how likely they would be to order a dessert. There was again a significant interaction between calorie-ending and motivation ( $F(1, 96) = 3.94, p = .05, \eta^2 = .039$ ) whereby the nine-ending (vs. round-ending) calorie condition significantly increased consumption likelihood when participants were health-motivated ( $F(1,96) = 4.63, p = .034, \eta^2 = .046$ ), but not money-motivated (*ns*).

We predicted that people who are motivated to be healthy feel less anticipated negative emotion about consuming unhealthy foods with nine- versus round-ending calories, and that this reduction in anticipated negative emotions leads to greater consumption likelihood. In Study 2, 99 respondents participated in a 2(calorie-ending)  $\times$  2(motivation) between-subjects design following the same procedure from Study 1B. In this study, however, participants were also asked how guilty they would feel if they ordered one of the desserts.

The results of the consumption likelihood DV replicated those of Study 1B. Also, a moderated mediation analysis (PROCESS model 8; Hayes, 2013) showed that anticipated negative emotions mediated the effect of nine-ending calories on consumption likelihood when participants were motivated to be healthy ( $B = .63$ ,  $SE = .23$ , 95% bootstrap CI: .22 to 1.10), but not when they were motivated to save money.

Study 3 explored a boundary condition for our effect. We predicted that when people have another means of justifying the consumption of calorific foods, such as when those foods contain healthy doses of vitamins and minerals, the effect of nine-ending calories should be diminished. Thus, this study had a 2 (calorie-ending) by 2 (nutrition condition: nutritious vs. innutritious) between-subjects design. Participants were asked about their anticipated guilt and consumption likelihood. A moderated mediation analysis (Hayes, 2013) replicated Study 2's effect for the innutritious dessert. However, when participants were told that the dessert had a lot of vitamins and minerals, calorie-ending was no longer needed for justification and no mediation relationship was found.

Study 4 examined actual food consumption and subsequent health related behaviors. 120 participants came to the lab and were primed with health motivation. Then, in an ostensibly unrelated second study, participants were told they would be doing a taste test for a limited edition flavor of M&Ms. Each participant was given 40 grams of M&Ms in small plastic bags with a nutrition label indicating 199 or 200 calories and instructed to eat as many as they wanted. The results showed a significant effect of condition on amount of candy eaten,  $F(1, 118) = 4.02$ ,  $p = .047$ ,  $\eta^2 = .03$ , whereby participants ate more M&Ms when told that the candies had 199 calories rather than 200 calories.

Finally, in Study 5, we investigated the role of self-control, which is strongly negatively related to guilt. Because health-motivated people feel less guilty about consuming nine- versus round-ending calorie desserts, we predict that high self control ironically leads to an enhancement of this effect, since these individuals are highly reliant on guilt to guide their behavior. 122 respondents were primed with health motivation by a news article and shown a picture of a dessert accompanied by the corresponding nutrition label. Self-control was measured using the self-control sub-scale of the Barratt Impulsiveness Scale (Barratt, 1959). Results revealed a significant interaction of calorie-ending and self-control on consumption likelihood ( $\beta = 1.61$ ,  $t(118) = 2.93$ ,  $p = .004$ ). As expected, the nine-ending (versus round-ending) label significantly increased consumption intention among high self-control ( $\beta = 2.27$ ,  $t(118) = 3.53$ ,  $p = .001$ ), but not low self-control ( $p > .53$ ) consumers.

In sum, six studies strongly suggest health-motivated consumers are more likely to consume nine- versus round-ending calorie desserts because they feel less anticipated guilt.

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### ***The Effect of Chronic Dieting Goals on Auditory Perceptual Biases***

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The way in which we process sensory stimuli is guided by our underlying goals and motivations. For example, in the motivated visual perception literature, researchers have found that people will interpret an ambiguous figure in a manner that fits with their desires and preferences (Balcetis & Dunning 2006). In addition, Balcetis & Dunning (2007) find that the motivation to reduce cognitive dissonance can lead people to see a distance as shorter than if they had not been experiencing dissonance. In general, the motivated



visual perception research has found that desirable objects are perceived as closer to us than non-desirable objects (Cole & Balci, 2013). However, the internal states people experience as well as their active goals or motivations affect the perceived distance between self and object. For example, in her research, Cole (2013) finds that when dieters encounter tempting food items, they perceive the unhealthy items as further away. This stream of investigation (e.g., Cole, 2013; Cole & Balci, 2013) proposes that these biases may ultimately help to decrease the motivational strength of the temptations and lead to behaviors associated with making healthier food choices.

The present research extends prior work by exploring how people's *auditory* perceptual processes are affected by their goals; specifically chronic dieting when presented with a tempting sound. According to Shinn-Cunningham & Best (2008), evidence supports the idea that the auditory object that is the focus of attention depends both on the inherent salience of the sound sources in the environment as well as the top-down goals of the listener (Shinn-Cunningham et al. 2008). With this in mind, in two lab studies, we tested how the goal of chronic dieting, as measured by Herman & Polivy's Restraint (1980) subscale Concern for Dieting, affected auditory perceptual processes; specifically the psychological distance that exists between a person and a temptation after listening to the associated tempting sound. Contrary to the visual perception work, where dieters perceived tempting objects as farther away as a means of self-regulation (Cole, 2013), this research finds that tempting sounds result in closer estimated proximity for people high in Concern for Dieting. Lastly, in a field study, we examine how body type affects distal perception of tempting sounds and subsequent purchase behavior.

In studies 1 and 2, participants were brought into a behavioral lab where they were individually seated at computer stations. Each station had a set of headphones with the volume set at the ambiguous level of "25". Participants were recruited under the assumption that they would be completing a series of studies. In study 1, eighty-three students rated their perceptions of distance from a tempting object (i.e., the ice cream truck) after listening to a 15 second clip of an ice cream truck jingle. After a filler task, we measured Concern for Dieting, which assesses the extent to which people chronically diet to control their weight (Heatherton, Herman, Polivy, King and McGree, 1988). Participants with a higher Concern for Dieting felt closer to the sound of the ice cream truck ( $b=.058$ ,  $SE=.026$ ),  $t(75)=-2.26$ ,  $p=.03$ ) than those with a lower Concern for Dieting.

In study 2, the main effect of chronic dieting on perceptual distance of sound was replicated and in addition, the data also demonstrate how the sound makes chronic dieters feel. Seventy-nine students provided their perceptions of distance after listening to the same ice cream truck jingle used in study 1. Again, we found that participants with a higher Concern for Dieting indicated that they felt closer to the sound of the ice cream truck ( $b=.08$ ,  $SE=.04$ ),  $t(72)=2.17$ ,  $p=.03$ ) than those with a lower Concern for Dieting. In addition, participants with high Concern for Dieting rated the sound as more annoying ( $b=.11$ ,  $SE=.05$ ),  $t(71)=2.23$ ,  $p=.03$ ) and more bothersome ( $b=.10$ ,  $SE=.05$ ),  $t(71)=2.2$ ,  $p=.03$ ) than those low in Concern for Dieting.

In order to identify how consumers would behave in a realistic setting outside of the lab, we designed a field study as our third experiment. At this point, twenty-six participants have been recruited for the experiment disguised as a marketing survey for the ice cream shop. In this study, consumers are intercepted after parking across the street from an ice cream shop in suburban New York. In return for their time (approximately 3 minutes), participants are awarded a coupon for \$1.00. Participants first listen to the same sound used in studies 1 and 2 via headphones connected to a laptop. Following the sound, they respond to questions to gauge their distal perceptions of the ice cream shop. Because we cannot blatantly ask participants about their chronic dieting goals as it might disrupt the ice cream shop's business, the researcher simultaneously classifies participants' body type from a pictorial scale of body contour drawings ranging from very thin (1) to very heavy (9) (scale taken from Thompson & Gray (1995)). At the completion of the survey, participants are given the coupon with an identification number that matches their survey and sent over to the ice cream shop. The researcher then staples their body scale to their survey to be later matched to their receipt.

Although this study is still underway, preliminary analyses reveal a relationship between body type and distal perception ( $b=-.2$ ,  $SE=.07$ ),  $t(24)=-2.65$ ,  $p=.01$ ) as well as body type and amount spent at the ice cream shop ( $b=-.21$ ,  $SE=.11$ ),  $t(24)=-1.94$ ,  $p=.07$ ). The results of study 3 provide us with real-world evidence that unbeknownst to consumers, tempting sounds do in fact impact their estimated distance from the temptation and their subsequent purchase decisions.

In conclusion, in two lab studies we find a main effect of concern for dieting on perceived distance from a temptation after listening to a tempting sound. In addition, we also know that tempting sound bother those with chronic dieting goals. Lastly, we also find intriguing preliminary results in a field study that have formed our ideas for a future lab study. In our next lab study in September, regulatory focus will be tested as the theory driving our effects.

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### ***Sounds Delicious: The Role of Intrinsic Auditory Sound on Food Consumption Quantity***

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Researchers have increasingly studied the impact of extrinsic cues on food consumption, including the presence of others (Campbell and Mohr 2011; McFerran et al. 2010), the size of the plate, product package, or even fork used (Mishra, Mishra, and Masters 2012; Wansink 2006), or simply the way the product is described (Finkelstein and Fishbach 2010). Less explored, however, are the consequences of intrinsic cues, or sensory properties, of the food being consumed. We explore the role of sensory processes in affecting when consumers decide to stop consumption.

The experience of eating engages all five senses—sight, smell, touch, taste, and sound—yet we propose each sensation is not equally weighted in forming consumption decisions such as whether to continue eating. We conducted a pilot study to better understand consumers' beliefs about how sensory experiences impact their consumption behavior. Two hundred twenty-three undergraduates were asked to respond to a hypothetical eating situation. We asked participants to consider the importance of each sensory modality in determining what food to start eating, when to stop eating, as well as the importance of each sensory modality on enjoyment. When determining which foods to eat, sound was significantly less important than all other sensory experiences. Similarly, sound was the least important sensory experience for deciding when to stop eating, and for how much participants would enjoy their meal. This initial set of findings empirically supports the proposition that sound is the “forgotten flavor sense” (Spence 2012).

While some research has explored the impact of external auditory cues (i.e., ambient sounds) on the consumption experience (Fedoroff, Polivy and Herman 2003; Woods et al. 2011; Spence and Shankar 2010), our findings from the pilot study indicate that the intrinsic sound that food makes may play a unique role in determining when consumers stop consuming, particularly if the importance of sound is increased. We specifically propose that as sound is made more important, intensity of the sensory experience will increase, resulting in a decrease in consumption. We explore the effect of increasing the importance of food sounds on consumption quantity, and establish the constructs that drive this process.

In study 1, eighty-seven undergraduates completed a food sampling study. A two condition (focus, no focus) between participants design assessed whether making the sound of food more important would affect the quantity of food (small cookies) consumed. The primary dependent measures were quantity consumed, rated enjoyment, and intensity of the sensory experience. A manipulation check confirmed that the focus of attention significantly differed between groups. Our analyses revealed that while enjoyment did not vary

between experimental groups ( $F(1, 85)=.19, ns$ ), there was a significant effect of condition on the intensity of the eating experience, such that focusing on the sound (vs. not) that the food made during consumption led to higher ratings of intensity ( $M_{focus}=5.68, M_{no\ focus}=4.93; F(1, 85)=5.79, p < .05$ ). Next, we examined whether this relationship affected quantity consumed. Analyses conducted through Preacher and Hayes's (2004) macro with bootstrapped samples (10,000) confirmed the mediating effect of intensity on the relationship between focus and consumption quantity (95% CI: .01, .11)—the focus on sound led to an increase in intensity and a decrease in consumption (Cookies eaten:  $M_{focus}=3.31, M_{no\ focus}=3.79$ ).

In study 2 we manipulated sound intensity through different instructions. Participants were randomly assigned to one of three experimental conditions in which they were instructed to eat either normally, as quietly as they could, or as loudly as they could. One hundred eighty-two student participants participated in a food sampling study similar to that employed in study 1, with the addition of three questions to assess how exciting the consumption experience was (fun, exciting, and creative;  $\alpha=.87$ ). A manipulation check confirmed that intensity was successfully manipulated such that “loud” condition was rated to be more intense ( $M_{loud}=5.28$ ) than both the control ( $M_{control}=4.53; t(181)=-2.49, p < .05$ ) and the quiet conditions [ $M_{quiet}=4.75; t(181)=-1.77, p < .05$ ]. Interestingly, both quiet and loud conditions led to similar reductions in quantity consumed compared to the control ( $M_{control}=3.38, M_{loud}=2.61, M_{quiet}=2.59$ ; both contrasts  $p < .06$ ). These findings suggest that intensity, while greater in the loud condition, does not have an additive effect on consumption over and above simply focusing on the food's sound. We explored this issue further by examining how intensity affected excitement. We found a main effect of eating instructions, such that the loud condition ( $M_{loud}=3.63$ ) was more exciting than the control ( $M_{control}=3.22; t(181)=-1.60, p=.11$ ) and the quiet conditions ( $M_{quiet}=3.01; t(181)=-2.46, p<.05$ ). A mediation analysis using two sets of dummy codes to account for three levels of our independent variable provided support for the mediating role of excitement on consumption (95% CI: .01, .43). Specifically, increasing excitement through sound intensity led to a reduction in consumption.

An explanation for our findings from these studies can be provided in two parts. First, being more mindful of the sensory experience reduces consumption of an unhealthy food (study 1). In particular, in study 1 we found that the sound intensity mediated the relationship between focus of attention and consumption quantity and that when manipulated (study 2), intensity indirectly affects consumption quantity by, in part, affecting the excitement associated with the task. This finding has interesting implications given that a food's sound intensity is controllable by the consumer. Therefore, to the extent that consumers can control the intensity of the sound, food quantity can be reduced. Additional studies are currently being conducted to more fully explicate the hypothesized model. Specifically, we are exploring the interaction between intrinsic and extrinsic sounds on consumption, while also using more physiological manipulations of sound intensity rather than simply an attentional or effort manipulation. Across a pilot study and two lab experiments we showcase the unique role sound plays in food consumption.

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## ***Individual Papers: Spread the Word: Discussion and Word of Mouth Effects***

### ***When Does The Opinion of “Anonymous” Affect Consumer Attitudes? The Role of Opinion Fluency***

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Opinions from anonymous others are ubiquitous in consumer decision-making. Consumers are exposed to the opinions of anonymous others when going online to search for information about products and services. Every day they can read news articles based on recent consumer polls—“Majority say Obama ‘not tough enough’” or “57% of internet users have little or no trust in social media.” In both

instances consumers get information about the preferences and choices of others without knowing who they are. Despite the high prevalence and use of anonymous opinions to inform decision-making, it is unclear when these opinions affect consumer attitudes. Seminal theories of social influence (Deutsch & Gerard, 1955; Latane, 1981; Tajfel & Turner, 1979) elucidate the normative influence of an identified source—for example positive versus negative reference groups, but do not speak to the influence of unidentified others. How is an unidentified group classified?

Recent research suggests that anonymous others can influence us, but their effect is inconsistent. Naylor, Lambertson, and Norton (2011) demonstrated that individuals naturally assume an unidentified other is similar to themselves and accept their influence. But in competitive settings, individuals believe unidentified others are dissimilar from them and do not accept their influence (Norton, Lambertson, and Naylor 2013). Online, anonymous reviews were shown to be less effective than those that disclose some identifying information (Forman, Ghose, and Wiesenfeld 2008). Thus the empirical evidence suggests that the influence of anonymous others depends on how inferences are drawn about their ambiguous identity.

We suggest that the psychological closeness of anonymous others is malleable and can depend on contextual factors. We focus on a factor that has been shown to affect perceptions of psychological distance—processing fluency (Alter and Oppenheimer 2008)—and examine its role in determining the influence of anonymous others.

Social influence can depend on the psychological distance between the source and target. The closer we feel to the source, the more likely we are to emulate their opinions and choices (Latané 1981; Goldstein, Cialdini, and Griskevicius 2008). Alter and Oppenheimer (2008) have demonstrated that people feel psychologically closer to a stimulus when it is fluent versus disfluent. For example, passengers at the same train station rated ‘New York’ as geographically closer to their location than ‘New York’. Similarly, we hypothesize that people will feel psychologically closer to an anonymous other whose opinion is fluent versus disfluent (H1). Therefore, people are more likely to emulate the attitudes of anonymous others whose opinions are fluent versus disfluent (H2). We further hypothesize that the effect of opinion fluency on psychological distance from others is limited to anonymous others (H3). We assume that opinion fluency is a subtle cue that cannot override other diagnostic information available about an identified source.

In study 1, participants indicated their attitudes toward a mug after reading a product description. Participants in the *control* condition were not given additional product information. Participants in the *fluent* and *disfluent* conditions were provided with the same favorable product review supposedly posted by an anonymous consumer. The *fluent* opinion employed an easy to read font, Arial size 12, (‘example’). The *disfluent* opinion employed italicized Arial font size 12 in grey, with decreased shadow (‘example’). Supporting H1, participants felt psychologically closer to the anonymous consumer who posted the fluent versus disfluent review. We did not obtain a direct effect of fluency on product attitudes, possibly due to a ceiling effect. However, using the bootstrapping procedure of Preacher and Hayes (2004), we found the psychological closeness to the reviewer caused an indirect effect of opinion fluency on product attitudes.

Study 2 examines whether the effect of opinion fluency on psychological closeness is limited to anonymous others. We generalize the finding to a new product category and set to avoid the ceiling effect in study 1. Participants indicated their attitudes toward a refillable ink pen after reading a product description and a fictitious product-review supposedly posted online by another user. They were assigned to conditions in a 2 (opinion fluency: fluent vs, disfluent) X 3 (user identity: anonymous, best friend, strongly disliked person) between-subjects design. The product review was identically favorable across conditions, but its display varied using the same fluent versus disfluent manipulation in study 1. To manipulate user identity, we asked participants to imagine that the review was posted by “someone,” by their “best friend,” or by someone they “strongly dislike.” The results supported H3 and revealed an interaction between opinion fluency and user identity. While opinion fluency affected the psychological distance from the reviewer in the anonymous condition, it did not affect psychological distance in the friend and in the disliked person conditions. Supporting H1,

when the source was anonymous, participants reported greater identification with him when his opinion was fluent versus disfluent. Product attitudes mirrored this pattern. Only when the reviewer was anonymous were participants' attitudes toward the product more favorable in the fluent (versus disfluent) opinion condition (supporting H2).

Study 3 further generalized the findings to anonymous others—a group versus just an individual. Participants imagined voting in a corporate philanthropic competition, read a short description of two non-for-profit organizations (pretested as equally preferred), and received the allegedly interim results of a consumer survey demonstrating a 40 points margin of preference (30% vs. 70%). We manipulated the fluency of the polling information using an Arabic numeral versus text manipulation (Oppenheimer and Alter 2009). In the *disfluent condition*, the poll outcomes were written in a sentence (“X received seventy percent of the votes and Y received thirty percent of the votes”). In the *fluent condition* the same result was provided using numbers (“X – 70%; Y – 30%”). We manipulated poll leader by telling participants that either X or Y was leading in the poll. Supporting H2, participants reported greater intentions to vote for, and held more favorable attitudes toward the poll leader in the fluent versus disfluent poll display condition.

Together, these studies suggest that psychological distance to an anonymous other can be contextually defined, and that this distance can determine whether consumers are influenced by their opinions.

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### ***When Pride and Gratitude Promote NWOM: How Specific Positive Emotions Affect Likelihood of Spreading Negative Word-of-Mouth***

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Three primary drivers of negative word-of-mouth (NWOM) are revenge, ego recovery, and desire to help others (Wetzer, Zeelenberg, and Pieters 2007). We suggest that the specific positive emotions of pride and gratitude differentially affect NWOM. Specifically, we argue that confidence associated with pride (Ashton-James and Tracy 2012) enhances the belief that one's NWOM will benefit others. Even though gratitude is other-focused, gratitude occurs as a result of receiving help from another, which might lead recipients to feel more vulnerable. While consumers worry that sharing negatives will lead to negative impressions (Berger 2014), confidence from feelings of pride should reduce this concern and increase perceived ability to help others, increasing NWOM relative to gratitude. We first examine lay beliefs of positive emotions on NWOM.

#### **Study 1**

A total of 131 mTurk workers participated in a 3(Emotion: Pride/Gratitude/Control) condition between-subjects study. Participants read a scenario about 'Pat', describing Pat's experience installing a high-end stereo system, which included missing and faulty components. Participants then read events occurring the next day that led to Pat feeling grateful (proud). In the gratitude condition, Pat received unexpected aid and secured an important business account with this help. In the pride condition, Pat secured an important business account due to hard work. Scenarios ended with Pat initiating a conversation with a close friend.

Participants indicated the extent to which they thought that Pat would tell the friend about the product failure (e.g., NWOM; three items,  $\alpha=.98$ ; Zhang, Feick, and Mittal 2014), as well as three items from each of three NWOM motivations (revenge, ego recovery, and helping others; developed based on Wetzer et al. 2007). ANOVA revealed a significant effect of emotion on NWOM

( $F(2,126)=24.66, p<.01$ ), wherein the control condition had the most NWOM, followed by gratitude, then pride (see table 1). A similar pattern was observed for ego recovery ( $F(2,126)=15.17, p<.01$ ) and revenge ( $F(2,126)=3.90, p<.05$ ). Consumers thus hold beliefs that, while both pride and gratitude will decrease NWOM, pride will decrease it more due to a decreased desire for ego recovery and revenge. S2 tests whether these beliefs are accurate.

### **Study 2: Pride/Gratitude Effects on NWOM**

S2 recruited 84 student participants for a 2(Emotion: Pride/Gratitude) condition between-subjects study. Participants first completed an autobiographical emotion prime (e.g., Wilcox, Kramer, and Sen 2011). After, participants indicated a product or service that they had recently been disappointed with and completed the same NWOM measure as in S1 (i.e., they imagined running into a close friend shortly after experiencing this failure).

Controlling for magnitude of disappointment, a main effect of emotion was observed ( $F(1,81)=4.09, p<.05$ ). Participants feeling pride were more likely to spread NWOM than those feeling gratitude. Thus, counter to consumers' lay theories, pride appears to result in greater NWOM than gratitude. Our next two studies describe how self-esteem and self-relevance of the failure interact with emotion to predict NWOM.

### **Self-Esteem and Self-Relevance as Moderating Factors**

Because pride more clearly promotes self-confidence and status than gratitude, we sought to disentangle whether consumer responses to the failure were being driven by self-esteem (Stotland and Cottrell 1961). Pride might increase salience of personal status and thus defensiveness in a low self-esteem individual, while boosting confidence in a high self-esteem individual (e.g. Brown and Marshall 2001). Gratitude may indicate personal weakness on the part of a low self-esteem individual, as opposed to social inclusion on the part of a high self-esteem individual (e.g., Tesser, Millar, and Moore 1988; Buunk et al. 1990). We thus expect that positive emotion effects on NWOM will differ by self-esteem.

Additionally, consumers with strong relationships toward self-relevant brands may view transgressions as more hurtful (Johnson, Matear, and Thomson 2011). We suggest that specific positive emotions and self-esteem will exert greater influence on NWOM when the brand is low self-relevance. S3 and S4 test these hypotheses using trait pride (S3) and self-esteem (S4).

### **Study 3: Incidental Positive Affect, Self-Relevance, and Trait Positive Affect**

Study 3 recruited 125 mTurk participants for a 2(Emotion: Pride/Gratitude) x 2(Self-relevance: High/Low) between-subjects study. Participants initially provided ratings of trait emotions, including trait pride (Shiota, Keltner, and John 2006) followed by a distraction task. Next, after completing the same emotion prime as S2, participants read about a fictional company, Tapat, that had identified the participant as a highly expensive customer that the company was considering "firing" (adapted from Johnson et al. 2011). To manipulate self-relevance, Tapat was described as either having/not having personal meaning to most of its customers. Participants then provided NWOM likelihood as per S2.

ANOVA revealed a three-way interaction between emotion, self-relevance, and trait pride ( $F(1, 117)=5.13, p<.05$ ). Among high trait-pride participants, when self-relevance was low, pride (vs. gratitude) promoted marginally greater NWOM, consistent with S2. Among low trait-pride participants, when self-relevance was low, gratitude promoted greater NWOM. No differences were observed for high self-relevance.

### **Study 4: Incidental Positive Affect, Self-Relevance, and Self-Esteem**

Study 4 recruited 503 adults from a nationally-representative panel for a 3(Emotion: Pride/Gratitude/Control) x 2(Self-relevance: High/Low) between-subjects study. Study protocol mirrored S3, with three exceptions. First, instead of measuring trait positive affect,

we measured self-esteem (Rosenberg 1965). Second, we included measures of motivation for spreading NWOM (i.e., revenge, ego recovery, helping others), as per S1. Third, we added a control condition.

ANOVA revealed a three-way interaction between emotion, self-relevance, and self-esteem ( $F(2,492)=3.17, p<.05$ ). The control condition largely mirrored the gratitude condition. Among high self-esteem participants, when self-relevance was low, pride (vs. gratitude) promoted directionally greater NWOM. Among low self-esteem participants, when self-relevance was low, emotion did not impact NWOM. No differences were observed for high self-relevance.

Significant mediation of the interaction was observed through helping others ( $\beta=-.46, 95\% CI=\{-.94,-.05\}$ ), but not revenge or ego recovery.

### **General Discussion**

Across four studies we demonstrate that pride (versus gratitude) promotes NWOM. Our observed pattern of results runs counter to lay beliefs and demonstrate that emotion effects are attenuated under high self-relevance and moderated by self-esteem. Overall, positive emotions appear to influence NWOM by influencing desire or confidence in ability to help others.

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### ***The Effect of Anticipated Firm Interaction on Attitude Gap***

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Firms often conduct market research surveys to collect information from consumers about their product and service experiences. In these surveys, consumers are asked to report their product or service experience on rating scales; in addition, consumers are also sometimes asked to take part in follow-up interviews intended to further probe their survey responses. These follow-up interviews are examples of anticipated firm interaction, which has been defined as consumers' expectation of discussing with a firm in the future about their consumption experiences (Schlosser and Shavitt 2002). We examine the effect of anticipated firm interaction on attitude gap, where attitude gap is defined as the difference between consumers' public attitude as expressed in market research surveys and their private attitude after consumption experience (Duhachek, Zhang, and Krishnan 2007).

We use a cognitive effort minimization framework to develop hypotheses about the effect of anticipated firm interaction on attitude gap. We started with the intuitive idea that the presence of anticipated firm interaction, compared to its absence, is likely to increase anticipated cognitive effort in the minds of consumers since firm interaction requires effort to answer questions from the firm. We then apply prospect theory to argue that managers should ask more in-depth questions to consumers when survey ratings are negative compared to positive, since negative ratings constitute losses which loom larger than gains (Kahneman and Tversky 1979). Hence, we propose that the positive effect of anticipated firm interaction on anticipated cognitive effort should be stronger when consumers have a negative compared to positive private attitude toward the firm (H1).

Next, we investigated the downstream consequence of anticipated cognitive effort on attitude gap. It has been argued that consumers have limited cognitive resources, and hence take steps to minimize cognitive effort during judgment and decision-making (Shah and Oppenheimer 2008; Simon 1955). If so, then one step that consumers could reduce high anticipated cognitive effort in the negative (compared to positive) private attitude condition would be to shift their public attitude upwards. This would avoid detailed questioning

by the firm during the future firm discussion and hence conserve consumers' cognitive resources. Hence, we propose that the positive effect of anticipated firm interaction on attitude gap will be stronger when valence of private attitude is negative compared to positive (H2).

Finally, we test the cognitive effort minimization mechanism driving attitude gap by examining an individual difference related to cognitive effort, namely need for cognition (NFC). Since low NFC individuals enjoy effortful tasks less than high NFC individuals (Cacioppo and Petty 1982), we expected that low NFC individuals would be more motivated to shift their public attitude upwards than high NFC individuals. Thus, within the negative private attitude condition, we propose that the positive effect of anticipated firm interaction on attitude gap will be stronger when NFC is low compared to high (H3); and this positive effect will be mediated by anticipated cognitive effort (H4).

We tested H1-H4 with four studies conducted on Mturk. Study 1 was a 2 (Anticipated Firm Interaction: Absent vs. Present) X 2 (Private Attitude Valence: Positive vs. Negative) between-subjects ANOVA. Participants were asked to imagine that they had stayed in a hotel and their experience was good (positive private attitude) or bad (negative private attitude). Next, participants were asked to imagine that they were asked by a hotel staff to complete a survey and take part in a follow-up interview with hotel management. Participants imagined that they had agreed (anticipated firm interaction present) or declined (anticipated firm interaction absent) to take part in the follow-up interview. Participants then completed a four-item scale ( $\alpha = .74$ ) measuring anticipated cognitive effort (Ein-Gar, Shiv, and Tormala 2012). Consistent with H1, the interaction effect was significant ( $F(1,135) = 3.91, p < .05$ ), such that the positive effect of anticipated firm interaction on attitude gap was stronger in the negative private attitude condition ( $M_{present} = 4.27$  vs.  $M_{absent} = 3.37$ ), but weaker in the positive private attitude condition ( $M_{present} = 2.98$  vs.  $M_{absent} = 2.92$ ).

Study 2 used the same design as study 1 but with attitude gap instead of anticipated cognitive effort as the dependent variable. To measure attitude gap, we used private attitude as the covariate in ANCOVA with the difference of public and private attitudes as the dependent variable (Duhachek et al. 2007). Private and public attitudes were measured using the same single item scale (1 = terrible/9 = excellent). Consistent with H2, results showed a marginally significant interaction effect ( $F(1,207) = 2.67, p < .10$ ), such that the positive effect of anticipated firm interaction on attitude gap was stronger in the negative private attitude condition ( $M_{present} = .33$  vs.  $M_{absent} = .09$ ), but weaker in the positive private attitude condition ( $M_{present} = -.06$  vs.  $M_{absent} = .02$ ).

Study 3 was a 2 (Anticipated Firm Interaction: Absent vs. Present) X 2 (Need for Cognition: Low vs. High) between-subjects ANOVA. The procedure was similar to study 2 except for two changes. First, we used different scales to measure public and private attitudes to reduce potential anchoring bias. Second, respondents completed NFC scale (Cacioppo, Petty, and Kao 1984), and a median split on this scale was used to create two levels of NFC. Consistent with H3, results showed a significant interaction ( $F(1,168) = 6.79, p < .10$ ), such that the positive effect of anticipated firm interaction on attitude gap was stronger in the low NFC condition ( $M_{present} = .59$  vs.  $M_{absent} = -.12$ ), but weaker in the high NFC condition ( $M_{present} = -.08$  vs.  $M_{absent} = -.01$ ).

Study 4 had the same design as study 3 except that we used a different product category of cruise and included a measure of anticipated cognitive effort ( $\alpha = .92$ ). We tested the proposed mediating role of anticipated cognitive effort using bootstrapping analysis for moderated mediation (Hayes 2013; model 14). Consistent with H4, results showed that the indirect effect of anticipated firm discussion on attitude gap through anticipated cognitive effort was significant in the low NFC condition (95% CI .0363 to .5141) but not in the high NFC condition (95% CI -.2561 to .0445).

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## *Following the Blind: How Expertise and Endorsement Style Impact Word of Mouth Persuasion*

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Word of mouth information is thought to help consumers make better choices (Berger 2014). However, this should only be true when people listen to those who know what they're talking about. While people sometimes know whether someone is knowledgeable about a product (e.g. friends), they often have little or no information about the sender's expertise (e.g. online; Dellarocas 2003).

How people talk about products is one way consumers might infer a sender's expertise and persuasive intent. Building on new research investigating language in word of mouth (Berger 2014), we propose that *how* consumers express a positive product opinion—their “endorsement style”—influences persuasion. Specifically, people should be more persuaded by strong, explicit endorsements (“I recommend it”) than weak, experiential endorsements (“I liked it”) as “recommendations” may be thought to represent stronger or more certain attitudes (Karmaker & Tormala 2003).

However, could the endorsement styles novices and experts tend to use lead consumers to make worse choices? For example, while wine connoisseurs should know how to choose a good wine, they might also know that tastes in wine vary (preference heterogeneity; Feick & Higie 1992). Without this awareness, less knowledgeable consumers may assume that what's good for themselves is good for everyone else, resulting in stronger “recommend” endorsements from novices. As a consequence of being both unskilled and unaware (Ehrlinger et al. 2008), novice consumers may tend to be more persuasive than experts, leading people to make worse choices.

In **study 1a**, participants imagined that a friend had just returned from a restaurant and told the participant “I recommend it” or “I liked it” (between subjects). Participants thought that they themselves would be more likely to enjoy the restaurant when the friend said “I recommend it” rather than “I liked it” ( $F(1, 64) = 9.83, p < .01$ ). This indicates that compared to the weak style, the strong endorsement style leads to greater persuasion.

**Study 1b** sought to assess recipient inferences behind this effect. Participants were assigned to the conditions from study 1a, but were asked to report how much they thought (1) the friend liked the restaurant and (2) the friend knew about restaurants (i.e., expertise). Compared to when the friend said “I like it,” the stronger endorsement style led people to think the friend liked the restaurant more ( $F(1, 69) = 50.56, p < .001$ ). Further, the strong endorsement style led people to think the friend had greater restaurant expertise ( $F(1, 67) = 6.41, p = .01$ ).

But are these inferences correct? While consumers expect more knowledgeable consumers to use the more persuasive “recommend” endorsement style, is this how word of mouth senders in fact behave?

**Study 2** addressed this question, and tested the hypothesized process underlying this effect (i.e., novices' lack of awareness of preference heterogeneity).

We asked participants to imagine posting a positive hotel review in one of two conditions—with or without a preference heterogeneity prime. Participants in the prime condition were reminded that, “people have very different preferences when it comes to this kind of hotel.” Participants then indicated which of two reviews they would be more likely to post. The versions differed only in whether they started and ended in strong (“recommend”) or weak (“liked”) endorsement styles. Finally, participants completed a test of hotel knowledge.

In the control condition, novices were significantly more likely to “recommend” the hotel than experts (57% vs. 43% at +/-1SD;  $B = .17, p = .01$ ). Adding preference heterogeneity as a moderator produced a significant interaction of this variable with hotel knowledge ( $B = -.10, p < .05$ ). While experts tendency to use strong endorsements in the prime condition (47%) was statistically equivalent to the control, novices were significantly less likely to “recommend” the hotel once they were made aware of preference heterogeneity (38%). This result suggests that novices’ tendency to use more persuasive “recommend” endorsements is indeed linked to their lack of awareness of preference heterogeneity.

**Studies 3a and 3b** illustrate both the cause and consequence of the relationship between expertise and endorsement styles.

In **study 3a**, we asked participants to choose between two wines. Both wines had three positive attributes, but to make one inferior we added three additional attributes pretested to be undesirable (e.g., “bottle contains clay sediment”). Experts should notice this and avoid the bad wine. However, low knowledge consumers use attribute numerosity as a heuristic cue for quality (Alba & Marmorstein 1987), and as a result should pick the inferior wine. Consistent with this expectation, novices (as measured by a wine knowledge test) were nearly twice as likely to pick the inferior wine as experts (45.5% vs. 28.7%,  $B = .23, p < .001$ ).

Next, participants were asked to imagine that they enjoyed the wine they chose, and wanted to tell others about it. They indicated whether they would be more likely to say, “I recommend” or “I liked” the chosen wine.

Replicating study 2, novices were significantly more likely to use strong endorsements than experts ( $B = .22, p < .01$ ). In sum, wine novices both (1) picked an inferior product and (2) used a stronger endorsement style than experts to share their opinion about it.

Finally, in **study 3b** we examined the impact of these recommendations on others’ choices. Participants were given the same wines as study 3a, but in addition to product information, half the participants (word of mouth condition) were also given the aggregate endorsement data from study 3a. Under a cover story of consumer opinion statistics, they were shown the percentage of consumers that “liked” or “recommended” each wine.

As predicted, the word of mouth condition led to inferior choices. Compared to the product information only condition (41.6%), seeing how many others liked or recommended the wine led more people to choose the inferior wine (55.3%;  $\chi^2(1) = 4.08, p < .05$ ).

By integrating conceptual insights from both sides of the word of mouth exchange, this research contributes to work on social perception, attitudes, and motivation and sheds light on a potentially aversive consumer phenomenon.

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## ***Individual Papers: Insights about Decision Conflict***

### ***Pain and Preferences: Observed Decisional Conflict and the Convergence of Preferences***

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Understanding how other peoples’ choices influences our own is important in many domains and contexts. Indeed, vast body of literature had studies social influence. That is, how the behavior of others impacts our own actions and attitudes (Cialdini &

Goldstein 2004 for a review). In this paper we add to this literature by demonstrating that observers' preferences are not only influenced by an actor's ultimate choice, *but also* by the *process* with which this choice was made. In particular, we hypothesize that observing others' choice conflict—a central and often conspicuous element of the decision making process—increases the likelihood that the observer's preferences will converge to those of the actor's. In a series of 7 studies we document this effect (across a wide variety of contexts), test the suggested mechanism, rule out rival accounts, and discuss the importance of this finding.

We advance an emotional-based mechanism. In particular, integrating literature on empathy and shared identity, we argue that watching others in “pain and agony” over their impending decision triggers empathic reactions that make the observer feel a greater sense of shared identity with the conflicted actor, leading to preference convergence. Our conceptual framework is grounded in literature showing that (i) empathic reactions lead to greater sense of shared identity (e.g., Aaron and Aaron 1986; Cialdini et al. 1997; Lerner 1980), and (ii) that participants with greater sense of shared-identity exhibit a more congruent behavior (Goldstein and Cialdini 2007).

Admittedly, one could also argue that observing a conflicted actor may signal to the observer that the actor conducted a more thoughtful and deliberate choice process, and therefore, must have made a better choice. According to this account, convergence of preferences will occur through inferential processes and “cold” cognitions. While we do agree that in some situations this may be the case, we argue that a separate mechanism is also at play. Throughout our studies we address this rival account and control for it, hence, isolating our proposed mechanism from “cold” inferential processes.

In Study 1 participants observed a paid confederate either conflicted or not (between-subjects) over an impending donation decision (i.e., real monetary donations to one of two charities). After observing the confederate's decision-conflict (high vs. low) and ultimate choice, participants approached the experimenter's table and were asked to make a similar decision (after the confederate left the room). Participants that observed the confederate experiencing greater decisional conflict tended to donate more to the same charity chosen by the confederate (counterbalanced) compared to participants assigned to the low-conflict condition ( $p = .002$ ).

As a first step in validating the proposed mechanism, we used an indirect measure for empathy. In particular, previous research has shown that interpersonal-distance (often operationalized by seating distance) is negatively correlated with empathic reactions (e.g., Bryant, B.K. 1982; Strayer and Roberts 1997). Accordingly, we measured how close participants decided to sit next to the confederate after observing his choice conflict. As expected, participants sat closer to the confederate in the high (vs. low) conflict condition ( $p < .001$ ). A mediation analysis supported that seating distance (our proxy for empathy) mediated the effect of observed conflict on preference convergence.

Study 2 employed pictures of facial expressions to manipulate observed decisional-conflict. A pretest verified that the pictures induced perception of greater decisional-conflict ( $p < .001$ ) but not perceptions of increased attentiveness or thoughtfulness (ns). In addition, we measured participants' innate tendency to empathize with others (using the IRI scale, Davis 1983). In the main study, participants learned about a dilemma that a certain person was facing and observed her (pretested) facial pictures, ostensibly taken during her deliberation. Consistent with our hypothesis, subjects were more likely to choose similar to an actor when the actor's facial expressions depicted high (as opposed to low) decisional-conflict and also compared to a condition in which no picture was provided ( $p < .01$ ). Inconsistent with an inferential process, this effect was more pronounced for people with a stronger innate tendency to empathize with others ( $p < .05$ ). Other individual differences (e.g., need-for-cognition) were also tested and ruled out.

Participants in Studies 3a and 3b learned about a person that was asked to choose between two boxes containing cash prizes of \$200,000 and \$0 (as part of a game show). Participants that attended more to the decisional-conflict of this actor (either by directly learning about it – 3b; or writing a paragraph describing his emotions and feelings during his deliberations – 3a) converged to this

person's choice more than participants in the low-conflict condition (3b) or emotionally-free paragraph (3a) conditions. Further, Study 3b found that participants' preferences converged to those of the conflicted actor's only when they deemed such conflict as reasonable/warranted. That is, when making a choice between boxes containing \$200,000 vs. \$0, but not when the boxes contained \$200,000 vs. \$150,000. It is noteworthy that the context in these studies was choice of a lottery in which decisional-conflict cannot be attributed to greater attentiveness (as the choice was completely random). Thus, rendering inferential explanations in this context moot.

Due to space limitations we will briefly describe studies 4-6. Study 4 extends these findings to moral dilemmas and vets the high and low conflict conditions also against a condition that does not provide any signal with respect to the decisional-conflict. In Study 5 we demonstrate convergence of preferences also in the product-attribute space (i.e., attribute weights). Finally, In Study 6, using a multi-step mediation analysis we test the entire path of the suggested mechanism: observed conflict [X], leads to empathic reactions [M1], which leads to greater sense of shared identity [M2], which leads to preference convergence [Y].

To summarize, as social creatures we are attuned to other people around us. Research in developmental psychology have documented that even young infants are predisposed and capable of emotional resonance; an important precursor of empathy (e.g., Decety and Jackson 2004). In this paper we argue and consistently find that such emotional reactions to others' "pain and agony" over an impending decision, brings our preferences closer to theirs.

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### ***Vice-Virtue Bundles***

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Troy Campbell, Duke University, USA

Gavan Fitzsimons, Duke University, USA

### **Introducing Vice-Virtue Bundles**

Consumers often face choices between vices and virtues (e.g., fries and salad). Although much research proposes ways to shift choices from vices to virtues, such efforts are often unsuccessful. We introduce a novel way to simultaneously alter the relative vice and virtue quantities that people select—vice-virtue bundles.

Vice-virtue bundles have proportions of both vice and virtue but the overall portion is equivalent to one option (proportion of vice-only option + proportion of virtue-only option = 1). These proportions can vary, containing more virtue ( $\frac{1}{4}$ -vice,  $\frac{3}{4}$ -virtue), similar proportions of virtue and vice ( $\frac{1}{2}$ -vice,  $\frac{1}{2}$ -virtue), or more vice ( $\frac{3}{4}$ -vice,  $\frac{1}{4}$ -virtue).

We examine which vice-virtue bundle people prefer in the food domain, predicting that consumers will be more likely to select a bundle containing  $\leq \frac{1}{2}$  vice than one containing  $> \frac{1}{2}$  vice. We predict that these choice patterns will result from *asymmetric effectiveness of small vice and virtue proportions at addressing taste and health goals*, respectively, and *variety seeking*.

### **Asymmetric Effectiveness of Small Vice and Virtue Proportions**

Most consumers desire to balance taste and health goals when making food choices (Dhar & Simonson, 1999). When a choice-set only contains vice and virtue (no bundles), only one goal can be addressed with a single choice if a consumer perceives vice to address taste

(but not health) and a virtue to address health (but not taste).

However, consider when three different vice-virtue bundles are introduced, resulting in five options varying in vice proportion: virtue-only,  $\frac{1}{4}$ -vice,  $\frac{1}{2}$ -vice,  $\frac{3}{4}$ -vice, and vice-only. As vice proportion increases from 0 (virtue-only) to 1 (vice-only), we hypothesize that perceptions of tastiness and healthiness follow distinct functional forms: an increasing concave function for tastiness and a decreasing linear function for healthiness.

We predict these functions based on the theory that when people rely more on feelings (affect) than on calculation (cognition) to make a judgment, they are more sensitive to stimulus presence/absence than to stimulus amount (Hsee & Rottenstreich, 2004).

Because tastiness is an affective attribute (Shiv & Fedorikhin, 1999), consumers may note whether vice is present. If any vice is present, perceived tastiness may show an immediate and substantial increase with diminished returns for subsequent marginal increases in vice proportion. Because healthiness is a cognitive attribute (Shiv & Fedorikhin, 1999), consumers' judgments may be more sensitive to amount of vice, and an option's perceived healthiness should decrease linearly proportionate to vice proportion.

These tastiness and healthiness functions suggest that at higher vice proportions, further increasing vice proportion will produce little further boost in perceived tastiness, but substantially decrease perceived healthiness. Consumers should thus seek to address taste and health by choosing a bundle with a relatively small vice proportion over one with a relatively small virtue proportion. Depending upon the importance that consumers place on addressing taste and health goals, the bundle chosen might be the  $\frac{1}{4}$ -vice or  $\frac{1}{2}$ -vice option, but is unlikely to be the  $\frac{3}{4}$ -vice option.

### Seeking Variety

This notion of asymmetric effectiveness of small vice and virtue proportions can be used to predict choices for consumers who view a given vice as tastier than a given virtue. However, for consumers who do not view vice as tastier than virtue, both tastiness and healthiness should be decreasing functions of vice proportion, and variety-seeking should explain why they select any proportion of vice. Additionally, any selected proportion of vice should be small (e.g.,  $\frac{1}{4}$ -vice) to allow variety-seeking without large healthiness decreases.

### Studies

Studies 1 and 2 test whether people select vice-virtue bundles and what vice proportions people prefer in vice-virtue bundles ( $\frac{1}{4}$ -vice,  $\frac{1}{2}$ -vice, or  $\frac{3}{4}$ -vice). These studies show that although choice share of the vice-only and virtue-only options are not different when no vice-virtue bundles are offered, offering vice-virtue bundles leads consumers to choose options that offer  $\frac{1}{2}$ -vice or  $\frac{1}{4}$ -vice.

Study 3 tests the two accounts (asymmetric effectiveness of small vice and virtue proportions; variety seeking) that we propose underlie choice of vice virtue-bundles. We measure tastiness and healthiness ratings for different options and choice among options. Results are consistent with our hypotheses about the shapes of the tastiness and healthiness functions and resulting option choices.

Study 4 demonstrates that choice patterns for consumers who would otherwise choose vice-only in the absence of vice-virtue bundles in particular cannot be explained by variety-seeking alone. We test the impact of removing the  $\frac{1}{2}$ -vice option—the option that tends to be chosen by these consumers—from the bundles offered. In the absence of this option, they opt for the  $\frac{1}{4}$ -vice option, rather than the  $\frac{3}{4}$ -vice option that is more similar to the vice-only option that they select in the absence of bundles. This finding provides further

support for our account of asymmetric effectiveness of small vice and virtue proportions at addressing taste and health goals, respectively.

### Summary

People consistently prefer vice-virtue bundles with  $\frac{1}{4}$  or  $\frac{1}{2}$  vice to those with  $\frac{3}{4}$  vice. These choice patterns arise due to *asymmetric effectiveness of small vice and virtue proportions* for those who perceive vice as tastier than virtue and due to *variety seeking* by those who do not perceive vice as tastier than virtue.

### Contributions

Besides having the clear practical implication that vice-virtue bundles can lead to healthier overall consumption when introduced in situations with a large enough proportion of people who would otherwise choose vice, this research makes several important theoretical contributions to the consumer psychology literature.

First, we extend understanding of the unhealthy=tasty intuition (Raghunathan et al., 2006), showing that the unhealthy=tasty pattern weakens within vice-virtue bundles as marginal increases in vice proportion sometimes produce little impact on perceived tastiness while producing large impact on perceived healthiness.

Second, we introduce distinct patterns for tastiness and healthiness as a function of vice proportion and introduce a useful distinction between consumers with different tastiness and healthiness functions.

Finally, other contexts besides food also involve trade-offs between affective and cognitive attributes. Accordingly, although the preferred proportions of vice and virtue may be specific to characteristics of health and taste goals, the concepts of identifying functions for affective and cognitive attributes are valid across domains.

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### ***Pride and Licensing Effects in Indulgence and Morality***

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Previous research has shown that the act of doing something “good” (e.g., eating a healthy meal, engaging in pro-social behaviors) can sometimes give individuals a license to indulging or acting immorally (Khan & Dhar, 2006; Merritt, Effron, & Monin, 2010; Witt Huberts, Evers, & De Ridder, 2012). This paper focuses on pride as an antecedent to licensing effects and has both theoretical and empirical implications.

Pride is a powerful self-conscious emotion, which involves both self-assessment and self-awareness (Cheng, Tracy, & Henrich, 2010). Pride is relevant to consumer behavior theory because this emotion affects many domains of consumer decision-making and moral judgment. It is also relevant to management practice because marketers have many tools to generate pride (e.g., commercials), but




they do not always thoroughly understand its effect on consumer behavior. Researchers have just begun to investigate how pride works to influence consumer decision processing and decision-making (Fredrickson, 2001; Patrick, Chun, & MacInnis, 2009; Wilcox, Kramer, & Sen, 2011).

This paper builds on existing research by examining how different types of pride (authentic vs. hubristic pride) can influence licensing effects. Authentic pride is associated with self-confidence and accomplishment (“I did well because I worked hard”). Hubristic pride is associated with arrogance and self-aggrandizement (“I did great because I am great”)(Tracy & Robins, 2007). We predict that authentic pride will lead to stronger licensing in indulgence than hubristic pride, especially when consumers have the cognitive resources that allow them to justify the indulgence. However, we also predict the opposite effect for moral licensing. We predict that authentic pride will lead to stronger licensing in morality than hubristic pride, especially when consumers don’t have enough cognitive resources. The underlying mechanism is that authentic pride leads to more moral disengagement (rationalize their unethical or unjust actions)(Detert, Treviño, & Sweitzer, 2008) than hubristic pride, especially when cognitive resources are limited, which in turn leads to more licensing in morality.

We have completed four studies to test our hypotheses about the effect of pride on licensing effects. First, we show authentic pride leads to more licensing in indulgence than hubristic pride (study 1), and this effect is especially true when consumers have enough cognitive resources (study 2). Second, we show that authentic pride leads to less licensing in moral decisions than hubristic pride when consumers have a chance to cheat (study 3), and more licensing in morality when consumers don’t have enough cognitive resources (study 4). We also tested the mediating role of moral disengagement in study 4.

The objective of the first study was to test our hypothesis that authentic pride leads to more licensing in indulgence than hubristic pride. Undergraduate students (N = 160) were asked to write about a time when they had succeeded through hard work and effort (authentic), behaved in a self-important manner (hubristic), felt happy (happy), or did laundry (control). As predicted, authentic pride led to more indulgent choice than hubristic pride, happiness, or the control. In study 1a (N= 78) and study 1b (N=140), we replicated the findings of study 1 using a different manipulation of pride and different measures of indulgence.

The aim of study 2 was to examine how cognitive resources influence licensing effects in indulgence. The overall design of the study was a 3 (pride: authentic pride vs. hubristic pride vs. control) × 2 (cognitive resource: high vs. low) between-subjects design. The analysis revealed a significant interaction between emotion and cognitive resources ( $F(1, 98) = 3.39, p < .01$ ), such that when cognitive resources were available, participants in the authentic pride condition assigned higher prices to the luxury logo products than did those in hubristic pride condition. However, when cognitive resources were limited, participants in the hubristic pride condition assigned significantly higher prices to luxury logo products than did those in authentic pride condition. We further examined the roles of pride on moral licensing effects in the last two studies.

The purpose of study 3 (N = 119) was to examine the effects of pride on moral licensing. We manipulated pride first then measured moral licensing through a dice game (Shalvi, Eldar, & Bereby-Meyer, 2012). Participants were asked to throw a virtual online die 15 times, and the outcome of each round determined their bonus payment as follows: \$.01 for , \$.02 for  ...and \$.06 for . This task enables participants to cheat by reporting an outcome that is higher than what is actually obtained. A one way ANOVA revealed a significant main effect of pride on honesty ( $F(1, 118) = 4.24, p < .05$ ), such that those primed with authentic pride were less likely to cheat than those who were primed with hubristic pride.

The purpose of study 4 (N= 167) was to test the role of cognitive resources in influencing moral licensing. The overall design of the study was a 3 (pride: authentic pride vs. hubristic pride vs. control) × 2 (cognitive resource: high vs. low) between-subjects design. In order to measure moral licensing, participants were asked to complete a subscale of the consumer ethics scale (Vitell & Muncy, 1992),

which describes situations where consumers passively benefit at the expense of others (e.g., saying nothing when the waitress miscalculates the bill in your favor). A two-way ANOVA on the consumer ethics scores revealed a significant interaction involving emotion and cognitive resources ( $F(2, 164) = 3.06, p < .05$ ), such that when cognitive resources were relatively high, manipulation of pride did not have a significant effect on the moral ethics score. However, when cognitive resources were relatively low, participants in the authentic pride condition had a higher moral licensing than those in the hubristic pride condition and the control condition. A bootstrap analysis showed that a 95% confidence interval for the size of the indirect effect excluded zero  $[-.88, -.10]$ , which suggests that moral disengagement was indeed a mediator. The mediation analysis showed that authentic pride increased moral disengagement, which led to more licensing effects in morality, especially when participants' cognitive resources were low.

This research provides evidence that the dual-faceted nature of pride influences indulgence and morality in different ways, such that feeling authentic pride leads to more licensing in indulgence but less licensing in morality, when consumers have enough cognitive resources. In addition, prior research has shown that authentic pride leads to more indulgence than hubristic pride or happiness (McFerran, Aquino, & Tracy, 2014; Wilcox, et al., 2011). The findings of this paper also suggest that sales appeals engendering authentic pride may increase consumers' willingness to pay for luxury products, especially when consumers have time to think about their pride. However, sales appeals engendering authentic pride may also increase consumer cheating, especially when consumers have little time to think about their pride. The past research, however, only examines this effect when consumers have ample cognitive resources (e.g., not being distracted when making a decision). In fact, consumers usually make decisions with limited cognitive resources (e.g., while being distracted). Therefore, by taking cognitive resources into account, this research advances the theory on pride and licensing effects. Thus, this research provides a unique theoretical and managerial contribution to pride on licensing effects by advancing our understanding of emotion and decision-making.

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#### ***Mixed Indulgences: Increased Functionality, Reduced Preference?***

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Imagine an indulgent chocolate that also provided you with necessary vitamins and minerals. This product sounds like the dream: you get to eat food that is considered “bad”, and now you're getting benefits! Despite how great this type of product seems in theory, in actuality, these “mixed” products have not taken over the food industry. In 2009 alone nearly 40 mixed chocolates were launched (Mintel, 2009). However, a recent survey of Americans found that most could not name even two such mixed products, and less than 40% had ever made a purchase in this category.

Previous research has looked at hedonic and utilitarian consumption as competing choices; hedonic consumption focuses on the emotions, self-expression, and pleasure (Ratchford 1987), while utilitarian consumption emphasizes cognitively-based functionality, and long-term goals (Dhar and Wertenbroch 2000). However, this either-or view does not consider “mixed indulgence” products that simultaneously contain attributes of both hedonic and utilitarian consumption. These mixed indulgences represent a growing consumption category of interest (Research and Markets 2014), yet they have not taken over the food industry and have yet to be studied at the academic level. This research takes the first steps in understanding consumer perceptions of mixed indulgences. In three studies, we investigate the following: (i) How do consumers perceive “mixed indulgences” compared to their “pure” counterparts? Are consumers seeing mixed indulgences as the best or worst of both worlds? (ii) What is the psychological process driving these effects?



Across studies, we examine a mixed indulgence that simulates real products in the market: a chocolate with added calcium. This is contrasted with its "pure" counterparts: a chocolate or a calcium supplement.

Study 1 examines whether a consumer mindset, versus a marketer mindset, influences individuals' perceptions of mixed indulgences. Given the disparity between product launches and product success in the marketplace, we expect that marketers believe mixed indulgences present added value to consumers, yet consumers' perceptions differ. In a 2 (mindset: consumer, marketer) by 2 (product: pure hedonic, mixed) between-subjects design, we assessed individuals' product perceptions. A significant interaction emerged on perceptions of product indulgence,  $F(1,131)=3.017$ ,  $p=.043$ . Specifically, "consumers" saw no difference in the indulgence of hedonic and mixed products ( $p > .9$ ), yet those in the marketer mindset saw the hedonic product as more indulgent than the mixed ( $p < .01$ ). We also found a significant interaction concerning how healthy one would be after consuming the product,  $F(1,131)=9.50$ ,  $p=.003$ . Marketers believed consumers would feel significantly healthier after consuming the mixed compared to the pure indulgence ( $p < .001$ ) while consumers viewed both products as equally unhealthy ( $p > .8$ ). This shows that despite marketers' belief that pure and mixed indulgences will be seen as different products, consumers do not differentiate between them, nor recognize the additional positive attributes the mixed indulgence possesses.

Study 2 asks whether certain situational conditions impact the appeal of mixed indulgences. Drawing from previous research on hedonic and utilitarian consumption, we examined two variables: an active health goal (Dhar and Simonson 1999) and incidental guilt (Zemack-Rugar, Bettman, and Fitzsimons 2007). These literatures suggest that both health primes and incidental guilt should increase consumer preference for mixed indulgences. Despite these predictions, there were no interactions, but only overarching significant main effects of preference for the pure indulgences over the mixed indulgences. Consistent with Study 1 and counter to previous research, it appears that consumer perceptions of mixed indulgences operate differently than those for pure hedonic and utilitarian options. Our third study examined whether the timing of consumption—is the product going to be eaten now, or later—would impact preferences. Prior research suggests that the value of the added (utilitarian) benefits should increase for "later" consumption (Read and Van Leeuwen 1998), thus increasing the choice of mixed indulgences.

Study 3 asked participants to make a (hypothetical) choice, and was a 2 consumption timing (now, later) by 4 choice set (hedonic/utilitarian, hedonic/mixed, utilitarian/mixed, hedonic/utilitarian/mixed) between-subjects design. Timing was manipulated by asking participants to imagine they were getting their choice immediately, or if they would eat their choice a week later. We also investigated whether the composition of the choice set would make the benefits of the mixed indulgence more salient. A significant main effect of choice set emerged on choice of the mixed product  $\chi^2 = 15.49$ ,  $p < .001$ . Regardless of consumption timing, we again find that individuals are least likely to choose the mixed indulgence. Specifically, we find that when the choice set is pure hedonic versus mixed, consumers do not differentiate between the two; 47.7% chose the mixed indulgence. Compared to just the utilitarian product, the mixed share drops to 31.4%, but when both pure options are presented alongside the mixed, its choice share drops to 8.6%. While we are currently running this study with actual choice, it further demonstrates that consumers are not seeing the potential benefits of mixed indulgences. Is there something that implicitly turns people off to products that contain both hedonic and utilitarian value?

Finally, to address the implicit perceptions of mixed indulgences, we are conducting a conjoint study to identify which attributes differentiate (or not) the mixed indulgence from its pure counterparts. While people may explicitly say that the health attributes of a product are most important, if this were the case, then mixed indulgences should have been preferred to pure indulgences. However, due to the persistent preference for pure products, we are assessing how people implicitly value different product attributes to gain insight into the consistently strong preference for "pure" over mixed products.

To our knowledge, there is little extant research on mixed indulgences despite extensive work examining hedonic and utilitarian decisions. This research represents an attempt to address the theoretical gap concerning the “in-between” space within the hedonic-utilitarian dimension. From a practical standpoint, the growing prevalence of these “mixed” products in the real world makes the understanding of mixed indulgences extremely relevant and important. In a market that believes mixed indulgences are the product of the future, understanding when and why these may be chosen versus hedonic and utilitarian goods is essential.

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## ***Special Awards Session: SCP Fellow, Early Career Award and Dissertation Competition Winners***

**BREAK**  
3:30pm-3:45pm

**SESSION 8**  
3:45pm - 5:00pm

## ***Symposium: Extending the Classic and Embracing the New: Frontier of Consumer Lay Theory Research***

**Chair:** Yimin Cheng, Hong Kong University of Science and Technology

### ***Biased Motivation in Evaluative Judgments and Decisions***

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Dhananjay Nayakankuppam, University of Iowa, USA

People collect information before making judgments and decisions, the action that is accompanied by what is called search costs. Research documents that there is a great deal of heterogeneity among people with respect to search costs based on situational factors (Smith, Venkatraman, Dholakia 1999; Hauser, Urban, Weinberg 1993).

The current research examines whether there is also chronic motivational difference among individuals as to how much search would be necessary to make solid judgments and decisions; some individuals emphasize efficiency motives, while others emphasize accuracy motives in their judgments and decisions. We suggest that efficiency-oriented individuals, compared to accuracy-oriented individuals, are likely to desire constructing their judgments relatively quickly by processing less amount of information.

We propose that individual’s implicit self-theory orientation may decide our motivations. Implicit self-theory refers to an individual’s lay theory about the malleability of his/her personal traits. There are two distinct implicit self-theories identified—entity vs. incremental theory (Dweck, Chiu, and Hong 1995). Entity theorists believe that their personal traits are fixed, while incremental theorists view their personal traits as malleable. Research finds that people extend their implicit self-theories to other people and even to such non-human objects as brands/products (Park and John 2010; Yorkston, Nunes, and Matta 2010), when they are making evaluative judgments on those. We propose that beliefs in fixed traits (entity theory) reflect an efficiency motivation, whereas beliefs in malleable traits (incremental theory) reflect an accuracy motivation. We reason that given that individuals extend their beliefs about

the malleability of the self to other people and things (presumably to the world), entity theorists are likely to see aspects of the world as relatively fixed and invariant, so that they may believe that relatively small amount of information can easily represent the core traits of things, which, in turn, induce efficiency motives in their judgments and decisions. In contrast, incremental theorists are likely to see aspects of the world as relatively volatile and dynamic, which, in turn, may induce accuracy motivation; consequently, they need to collect large amount of information to deal with these variant aspects of things and contexts.

**Color-Tile Game: The Two Different Worlds.** These lines of reasoning can yield different predictions on each theorist's search behaviors—more search for incremental theorists and less search for entity theorists. To test this idea, we designed a computer game, called the Color-Tile Game (<http://research3.its.uiowa.edu/moneygame>). The game is designed as a world made up of 100 tiles of 4 different colors. Under each tile is a certain payoff (negative or positive). Turning over a tile costs something. In addition to the cost of turning over a tile, one could also pay an amount to obtain some information about what is below the tile, which would then place one in a better position to decide whether to invest in turning over the tile or not (i.e., information cost). In the game, some colors are stable and predictable (they overwhelmingly pay well or overwhelmingly penalize the player). Other colors are unpredictable (they sometimes pay well and sometimes penalize the player) (see Table 1). In other words, the stable colors reward efficiency motivations – the sooner an evaluative judgment is formed, the sooner one can avoid incurring the cost of information. The unpredictable colors reward accuracy motivations – you are well served by paying the cost of information because it lets you benefit from the subset of tiles that are rewarding and helps you avoid the lethal ones by paying a smaller cost (the information cost). We predicted that entity (incremental) theorists would 'do' better in the efficiency-rewarded (accuracy-rewarded) areas of the world rather than in the accuracy-rewarded (efficiency-rewarded) areas of the world.

**Experiment.** Ninety-six undergraduate students (Male = 63.5%, Average Age = 21.2) are participated in two (implicit self-theory: entity vs. incremental theorists) between-subjects design. Each participant was first primed with either entity or incremental theory (Chiu et al. 1997) and proceeded to Color-tile game. A one-way ANOVA on the number of the information options used confirmed that entity theorists hit less information options than incremental theorists ( $M_{Ent}=59.10$ ,  $M_{Inc}=79.00$ ,  $F(1,95)=10.81$ ,  $p<.001$ ) across all colors (see Table 2), indicating that entity theorists were more likely to be efficiency-oriented whereas incremental theorists were more likely to be accuracy-oriented.

We predicted that as a result of these behavioral differences (i.e., number of information options used), there would be differences between entity and incremental theorists in the sources of earning. These effects should then emerge as a form of the interaction between implicit self-theory and the color of tiles. A 2 (implicit self-theory) X 4 (color of tiles) mixed ANOVA on rewards earned from each color demonstrated the significant interaction effect ( $F(3,383)=7.51$ ,  $p<.001$ ), as well as the main effects of implicit self-theory ( $F(1,383)=3.97$ ,  $p<.05$ ) and of color ( $F(3,383)=851.77$ ,  $p<.001$ ). Planned analyses revealed that entity theorists earned more at red ( $F(1,95)=4.87$ ,  $p<.05$ ) and yellow ( $F(1,95)=2.79$ ,  $p=.098$ ) than incremental theorists, whereas incremental theorists did better at blue ( $F(1,95)=8.95$ ,  $p<.01$ ) and green ( $F(1,95)=7.43$ ,  $p<.01$ ) than entity theorists (see Table 2). These results confirmed our contention: entity theorists tried to efficiently earn money in the game (i.e., with less number of right-clicks), whereas incremental theorists tried to accurately earn money in the game (i.e. more number of right-clicks).

**Conclusion.** The current research provides the evidence of a stable motivational bias between these kinds of individuals. Entity theorists are biased towards emphasizing efficiency motives and this results in a tendency to make quick judgments with less number of "search" for efficient judgments and decision-making, whereas incremental theorists are biased towards emphasizing accuracy motives and this results in a reluctance to make quick judgments and in more number of "search" for accurate judgments and decisions. If we extend these findings in the game (each theorist's different strategies employed and different performances) into their daily lives, we may expect that entity theorists would do better in relatively stable and invariant environments, whereas incremental theorists would do better in relatively dynamic and volatile environments.

***What Goes Around Comes Around: The Role of Karma on Donation Intentions***

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The saying “you reap what you sow” embodies a guiding principle of the karmic doctrine, suggesting that one’s current actions have future consequences (Krishan 1997). Intuitively, individuals who strongly believe in karma should be more likely to engage in good deeds, such as volunteering, resulting in karmic rewards. However, we propose that it is not the virtue of the prosocial behavior per se, but the altruistic versus egoistic motivation driving it that determines the impact of karmic beliefs on responses to charitable appeals. Since karmic rewards accrue to those who do good deeds to benefit others (rather than themselves), individuals who believe in karma should respond more favorably only to those charitable appeals that highlight other-benefits compared to self-benefits.

Karma claims that current actions will affect future outcomes, which supports the importance of committing righteous acts. However, good deeds can be engaged in for either altruistic (Batson 1991; Krebs 1970) or egoistic (Campbell 1975) motivations. Since motivations to engage in prosocial acts are not always selfless, we argue this can have implications for individuals who strongly believe in karma because interpretations of the karmic doctrine take into consideration the individual’s motivation behind committing a particular action (Ghose 2007; Reichenbach 1998). We contend that charitable appeals framed as self-benefit (vs. other-benefit) will moderate the relationship between strength of belief in karma and propensity to engage in prosocial acts.

Study 1 investigates the moderating role of framing charitable appeals as self-benefit (vs. other-benefit) on propensities to engage in prosocial acts among individuals who strongly believe in karma. One hundred and forty-one individuals participated in a 2 (prime: karma vs. control) x 2 (charitable appeal: self-benefit vs. other-benefit) between-subjects study. First, participants in the believe in karma condition read a passage highlighting the central tenants of karma, while the participants in the control condition read a passage about routine activities (see Kopalle et al. 2010). Participants evaluated a fictitious charitable appeal, where those in the self-benefit (vs. other-benefit) condition read a charitable appeal that focused on donating to protect you (others). The dependent variable was likelihood of volunteering for the charity. Participants completed the Belief in Karma Scale (Kopalle et al. 2010,  $\alpha = .71$ ) and Belief in a Just World Scale (Dalbert 1999,  $\alpha = .91$ ). An ANCOVA yielded a main effect of belief in karma ( $F(1,135) = 4.18, p < .05$ ) and hypothesized belief in karma by charitable appeal type interaction;  $F(1, 135) = 4.53, p < .05$ . In particular, only participants primed with karmic beliefs expressed greater volunteer intentions following the other-benefit appeal ( $M = 6.16$ ) compared to the self-benefit appeal ( $M = 5.57$ );  $F(1, 54) = 5.89, p < .05$ .

Study 2 operationalizes self-benefit versus other-benefit charitable appeals through the presence (vs. absence) of incentives for donation. Sixty-two English-speaking female individuals participated in the study that consisted of 1 manipulated factor (incentive: present vs. absent) and 1 measured factor (belief in karma, continuous). Participants evaluated a fictitious charitable appeal for Planned Parenthood, which was consistent across conditions, except the incentives present appeal highlighted the chance to be entered into a drawing for a gift card conditional upon donating. The dependent variable was likelihood of volunteering. Participants completed the Belief in Karma Scale (Kopalle et al. 2010,  $\alpha = .64$ ), the Religious Commitment Inventory-10 (Worthington et al. 2003,  $\alpha = .97$ ), involvement and frequency of volunteering.

Regression analysis found a main effect of belief in karma ( $\beta = .44, t(57) = 2.58, p < .05$ ), and a significant incentive and belief in karma interaction ( $\beta = -.43, t(57) = -2.53, p < .05$ ). A spotlight analysis one standard deviation above the mean of belief in karma showed a significant difference such that individuals with strong beliefs in karma indicated greater donation intentions when incentives were absent (vs. present);  $\beta = -.35, t(57) = -2.05, p < .05$  (Aiken and West 1991). There was no difference between incentive conditions for those with low levels of belief in karma;  $\beta = .34, t(57) = 1.75, p > .05$ .

Study 3 operationalizes self-benefit versus other-benefit charitable appeals through varying levels of identification. Two hundred and ninety-four respondents participated in a study that consisted of one manipulated factor (gender identity salience: high vs. low) and one measured factor (belief in karma, continuous). The gender identity salience manipulation consisted of a low versus high identification condition, following prior research (Puntoni and colleagues 2010). The dependent variable was likelihood of volunteering with the charity. Participants rated the degree to which their donation decisions were influenced by thoughts of themselves (vs. others), the Belief in Karma scale (Kopalle et al. 2010,  $\alpha = .75$ ), and familiarity with the disease.

A regression with analysis yielded a significant interaction between gender identity salience and belief in karma ( $\beta = -.21, t(290) = -2.39, p < .05$ ). Spotlight analysis showed a significant difference such that individuals with strong beliefs in karma indicated greater donation intentions when gender identity was not salient (vs. salient);  $\beta = -.16, t(289) = -1.97, p = .05$  (Aiken and West 1991). There was no difference between gender identity salience conditions for those with low levels of belief in karma;  $\beta = .13, t(289) = 1.60, p > .05$ .

To examine if other-focus mediated the interactive effect of beliefs in karma and the incentive conditions on volunteer intentions when gender identity was salient, we employed the bootstrapping approach to derive confidence intervals, using the SPSS-macro syntax developed by Hayes (2012, model 8) with 5,000 resamples. Analysis showed that the indirect effect of the highest order interaction was negative and significant (95% CI:  $-.3064, -.0164$ ).

This research adds to the peculiar beliefs literature by showing that belief in karma manifests a causal link of current actions resulting in either future rewards or consequences that ultimately impact consumers' behaviors. It also contributes to the literature on charitable appeals by providing evidence that the framing of an appeal as a self-benefit (vs. other-benefit) moderates the relationship between an individual's belief in karma and propensity to engage in prosocial acts.

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### ***Conditioned Superstition and Goal Orientation: Identifying Goals that Elicit Superstitious Behavior***

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“Conditioned superstition” occurs when an item has previously been associated with a positive outcome—despite there being no causal link between the item and outcome—and people prefer that item in order to facilitate a similarly positive future result. For example, a college student may note the pen that was used while earning an “A” on an exam, and continue to use this pen in hopes of ensuring continued future success. Five studies investigate which types of achievement goals (i.e., performance or learning goals) are most likely to prompt someone to engage in this superstitious behavior.

Performance goals are those in which people seek to be judged by others as competent, whereas learning goals are those in which people seek to master a new field or increase their current level of competence (Dweck, 1986). We suggest that people are more likely to resort to superstition to achieve performance goals, rather than learning goals. We also expect that individuals high (vs. low) performance orientation will be more likely to engage in superstitious behavior, but that this will not occur for learning orientation. Moreover, this result will be more pronounced occur under conditions of high (vs. low) uncertainty.

In Experiment 1, participants completed a goal orientation inventory, and read a vignette in which they imagined playing in a basketball league. The story referred to a stockout of their favorite orange juice, during which they consumed a new brand for two weeks. Participants were either informed that they experienced basketball success with the new juice (superstition), or they were not given any information about their quality of play (no-superstition). The DV was preference for the new orange juice brand. A significant interaction occurred between performance orientation and superstition ( $t = 2.08, p < .04$ ). At high levels of performance orientation, superstition (vs. no-superstition) participants more strongly preferred the new brand of juice ( $\beta = 2.25, t = 4.44, p < .01$ ). There was no difference in brand preference at low levels of performance orientation, nor was there significant interaction between superstition and learning orientation.

In Experiment 2, participants again completed a goal orientation inventory, and answered trivia questions using two different computer backgrounds (blue and green). Participants received false performance feedback, either answering more questions correctly using the green than blue background (superstition) or performing equally well using both backgrounds (no-superstition). The DV was preference for using the blue or green background for a final set of trivia questions. A significant interaction occurred between superstition and performance orientation ( $t = 2.63, p < .01$ ). At high levels of performance orientation, those in the superstition (vs. no-superstition) condition preferred the lucky green background ( $\beta = 1.78; t = 3.78, p < .001$ ). At low levels of performance orientation, there was no difference in this preference based on superstition. No interaction occurred between learning orientation and superstition.

Participants in Experiment 3 were given information about a pen that had been associated with prior success and was therefore “lucky” (superstition), or they were given no information about the pen’s history (no-superstition). Participants imagined that they were going to use the aforementioned pen to complete a homework assignment, with the goal to either “master the material that the professor is teaching” (learning goal) or “get a good enough grade to have it count towards your degree” (performance goal). A significant interaction occurred between goal type and superstition ( $F(1, 96) = 5.77, p < .02$ ). Participants with a performance goal preferred the target pen more strongly in the superstition cell ( $M = 4.18$ ) than in the no-superstition cell ( $M = 2.18; F(1, 96) = 17.47, p < .0001$ ). Participants pursuing a learning goal, however, did not differ in their preference for the target pen based on superstition.

In Experiment 4, participants played four rounds of Rock/Paper/Scissors (RPS) matches against a computer program while using two different video game “avatars”: a male teenager and a male scientist. Each avatar was present during two of the four rounds. The results were rigged so that participants in the superstition condition won 60% of the matches with the teenage avatar, but only 20% of the matches with the scientist avatar. In the no-superstition condition, participants also won 60% of their matches in two rounds, and 20% in the remaining two, but no avatars were present. All participants were instructed to complete a “science quiz,” for which they were given a performance goal (“do a better job at guessing the right answers than other people”) or a learning goal (“increase your knowledge of science”). A significant interaction occurred between superstition and goal type ( $F(1, 198) = 6.85, p < .01$ ). Participants with a performance goal preferred the teenage avatar more strongly in the superstition condition ( $M = 5.13$ ) than the no-superstition condition ( $M = 3.10; F(1, 198) = 15.29, p < .001$ ). For participants with a learning goal, there was no difference in preference for the avatars based on superstition.

In Experiment 5, conditioning trials paired video game avatars with success (teenage avatar) or failure (lawyer avatar) during a series of RPS matches. Subsequently, participants were directed to answer a series of multiple choice questions about “laws and statutes in the US.” The goal was to “do better than other people who take it” (performance) or “increase your knowledge about legal issues in the US” (learning). Accomplishing this goal was presented as easy (low uncertainty) or difficult (high uncertainty). A significant interaction occurred between goal type and uncertainty ( $F(1, 111) = 4.57; p < .04$ ). For high-uncertainty participants, preferences for the lucky teenage avatar (versus the lawyer avatar) were higher with a performance goal ( $M = 6.04$ ) than a learning goal ( $M = 4.90$ ;  $F(1, 111) = 3.95, p < .05$ ). In the low-uncertainty condition, there was no difference in preferences for the avatars based on goal type.

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### ***Do Costly Options Lead to Better Outcomes? How the Protestant Work Ethic Influences Outcome Predictions Based on Cost of Means***

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People have a fundamental desire for relaxation and ease, however, previous literature has found that sometimes people prefer a costly way of doing things when they have easier options (Keinan and Kivetz 2011; Kim and Labroo 2011; Labroo and Kim 2009; Schrift, Netzer, and Kivetz 20011). The current paper contributes to this stream of research by testing an important qualifier, the Protestant Work Ethic (PWE; Weber 1905), which is one of the few influential concepts that spans nearly all social sciences but has been largely ignored by consumer researchers (Furnham 1990). Across five studies, we either manipulated or measured PWE, and found that (1) higher PWE people anticipate superior outcomes from the more costly means, across different types of cost; (2) higher PWE people are more likely to choose the more costly means, and this tendency is mediated by the anticipation of achieving superior outcomes through costly means.

In his influential book *The Protestant Ethic and the Spirit of Capitalism* (1905), Max Weber attributed the rise of western capitalism to the religious ethics of Puritans. He argued that Puritans pursue wealth and material gain for their own sake beyond necessary needs because they see hard work as a duty to fulfill the calling of God. Psychologists have since developed psychometric scales to measure PWE (e.g., Mirels and Garrett 1971) and tested its relationship with work-related judgment and behavior. For example, Greenberg (1978) found that high PWE people tended to engage in work-related activities during trips to and from their workplaces. Furnham (1985) also found that high PWE people tended to blame the unemployed for their laziness.

High PWE people prefer hard work to idleness. However, are they more likely to assume that costly means generally ensure better outcomes? Although Weber originally conceptualized PWE as a moral principle of “hard work is desirable for its own sake”, previous research implies that PWE is embedded with an instrumental lay belief of “hard work pays off.” For example, factor analysis on PWE scales consistently shows that “hard work pays off” and “hard work for its own sake” are two orthogonal factors (Miller, Woehr, and Hudspeth 2002; Tang 1993; Furnham 1990). The former factor includes items such as “If you work hard you will succeed” and “Any problems can be overcome with hard work”, while the latter includes items such as “I feel uneasy when there is little work for me to do” and “Even if I were financially able, I would not stop working.” PWE is also positively correlated with internal control (e.g., Mirels and Garrett 1971), and the more a person is orientated towards internal control, the more likely s/he is to have stronger performance-to-outcome expectancy (Lawler 1971). We hypothesize that higher PWE people’s domain-specific belief of “hard work

pays off” may generalize to a domain-free lay theory of “costlier means lead to better outcome”, making them more likely to choose the costlier means to achieve goals. We tested this hypothesis in five studies.

Study 1 measured PWE and manipulated cost as the pleasantness of taste in medicine. MTurkers (N=152) were shown a print ad of a cough syrup that claimed it tasted either awful or great. High PWE participants judged the bad-tasting cough syrup to be more effective. However, low PWE participants judged both syrups as being equally effective.

Study 2 (N=191) replicated the same pattern as study 1 by measuring PWE and manipulating course workload. Results showed that high PWE students anticipated better learning outcomes from a course framed as tough (vs. easy), and were equally willing to enroll in both courses. In contrast, low PWE students anticipated equal learning outcomes from both courses and preferred to enroll in the easy course. Mediated moderation showed that although workload had a negative direct effect on willingness to enroll, it was mitigated by a positive indirect effect through anticipated better learning outcome among higher PWE students but not among lower PWE students.

Study 3 (N=180) was conducted on MTurk five days before Christmas, 2013. We manipulated high vs. low PWE in an ostensibly unrelated task (using a pretested manipulation) by asking participants to rank six quotes that either advocated or opposed the idea that “hard work pays off”. Then all participants named a person who lived far away and to whom they would like to send a Christmas gift. Then, we asked them to imagine that there were only two unfamiliar courier brands available, one charging 50% less than the other. Results showed that participants primed with high (vs. low) PWE expected that the more expensive brand was more likely to successfully deliver their gift in time.

Study 4 (N=213) manipulated PWE the same way as in study 2. Then all participants chose between two filler tasks to do (one difficult and the other easy) before they worked on the main test in which they could earn money. When the filler tasks were framed as “training tasks”, priming high (vs. low) PWE made participants more likely to choose the difficult task. We also ruled out the competing mechanism of “hard work for its own sake” because when the filler tasks were framed as “unrelated tasks”, priming PWE had no impact on choice.

Study 5 (N=170) asked students to make a real choice between two health foods, of which one was sweet and the other bitter. Echoing study 4, high (vs. low) PWE people were more likely to choose the bitter food, but only when its efficacy was ambiguous rather than ensured. Moreover, two self-reported behavioral cues related to PWE (i.e., how many hours do you work on the weekend; how much in advance do you set your alarm clock for appointments) predicted the same results as the PWE scale. This implies that marketers can customize their communications to high vs. low PWE consumers by identifying them through simple observation.

Work and consumption are two major facets of modern life. This research shows that a person’s work ethic can spill over and influence consumption decisions due to a generalized lay theory.

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## ***Symposium: New Perspectives on Choice Overload***

**Chair:** Alexander Chernev, Northwestern University, USA

Evan Weingarten, Wharton School of Business, USA



## *Choice Overload: A Conceptual Review and Meta-Analysis*

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The importance of assortment decisions for both retailers and manufacturers has been underscored by numerous research articles, marketing textbooks, and the popular press. Because of its wide-ranging impact, the topic of how product assortment influences consumer choice has generated a substantial amount of interest across different research domains, including economics, analytical and empirical modeling, individual and group decision making, and social psychology.

Within assortment research, the topic of the negative consequences of large assortments has attracted a disproportionate amount of interest among researchers. This interest can be attributed largely to the paradoxical finding that variety can be detrimental to choice, which challenged the conventional wisdom that providing consumers with more options always facilitates choice (Iyengar and Lepper 2000). Building on these findings, recent research has moved beyond simply documenting choice overload to identifying its antecedents and boundary conditions. In doing so, researchers have identified a number of important moderators of choice overload, such as attribute alignability, consumer expectations, availability of an ideal point, personality traits and cultural norms, option attractiveness, decision focus, construal level, time pressure, product type, consumer expertise, and variety seeking.

Despite the voluminous evidence that large assortments can lead to choice overload, the question of whether and when large assortments are detrimental to choice remains open. Indeed, even though extant research has identified a variety of antecedents and consequences of choice overload, the individual studies use diverse independent and dependent variables. As a result, the findings of these studies fail to come together in a cohesive understanding of whether and when assortment size is likely to lead to choice overload. The goal of our research, therefore, is to identify factors that reliably moderate the impact of assortment size on choice overload and generalize them into an overarching conceptual framework. To achieve this goal, we abstract from the specific variables and manipulations reported in the individual studies to identify the key drivers of choice overload, quantify the effect sizes associated with these factors, and evaluate their impact on choice overload.

In a meta-analysis of 99 observations ( $N = 7,202$ ) reported by prior research, we develop an integrative, overarching model that characterizes the impact of assortment size on choice overload. To the best of our knowledge, this is the first attempt to identify the key conceptual drivers of choice overload, empirically test their validity, and quantify their relative effects.

Specifically, in this research we identify four key factors that can reliably predict whether, when, and how assortment size is likely to influence choice overload: (1) the difficulty of the decision task, which reflects the structural properties of the decision task, operationalized in terms of time constraints, decision accountability, number of attributes describing each option, and the complexity of the presentation format; (2) the complexity of the choice set, which reflects the value-based relationships among the choice alternatives, including the presence of a dominant option as well as the overall attractiveness, alignability, and complementarity of the choice options; (3) consumers' preference uncertainty, which reflects the degree to which consumers can evaluate the benefits of the choice options and have an articulated ideal point; and (4) consumers' decision goal, which reflects the degree to which individuals aim to minimize the cognitive effort involved in making a choice among the options contained in the available assortments. More important, we show that each of these four factors has a directionally consistent and significant impact on choice overload, such that higher levels of decision task difficulty, greater choice set complexity, higher preference uncertainty, and a more prominent, effort-minimizing goal facilitate choice overload.

In addition to identifying the key factors that moderate the impact of assortment size on choice overload, we identify several common outcomes of choice overload used as dependent measures in prior research—satisfaction/confidence, regret, choice deferral, switching likelihood, assortment choice, and option selection—and examine the ability of these measures to capture unique aspects of the impact of assortment size on choice overload. In this context, we find that four of the six dependent measures—satisfaction/confidence, choice deferral, switching likelihood, and regret—are not significantly different from one another, suggesting that these four measures capture the impact of assortment size in a similar way and hence can be used interchangeably. To the best of our knowledge, this is the first systematic attempt to compare the degree to which different measures are able to capture the impact of assortment size on choice overload. Documenting the convergence of different operationalizations not only validates choice overload as a construct but also defines a set of equivalent operationalizations that could be used interchangeably in future research.

Our analysis further documents the presence of a significant main effect of assortment size on choice overload across studies that test the main effect of choice overload without explicitly controlling for moderating effects. This finding is notable because it is counter to the findings reported by prior research advocating the absence of such an effect (Scheibehenne et al. 2010). This discrepancy lends support to the notion that the main effect of assortment size is vulnerable to a variety of context effects and therefore is not a reliable measure of choice overload.

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### ***Choice Overload and Strategies for Constructing Consideration Sets from Large Product Assortments***

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When visiting retailers (both online and brick-and-mortar), consumers are overloaded with an abundance of choice. While research has documented the costs and consequences associated with too many choices (Iyengar and Lepper 2000), little attention has been given to how overchoice affects the decision-making process preceding a final choice. Many consumer choices are made in a hierarchical fashion (Kahn and Lehmann 1991), and consumers often narrow down the choice set to a more manageable consideration set before they make a final choice (Chakravarti, Janiszewski, and Ülkcimen 2006). But how do consumers narrow large assortments to smaller sets? What factors affect the strategy consumers use to form a narrower set? And could these strategies help us understand how to mitigate the negative consequences of overchoice?

In this research we investigate how the choice context affects the strategy consumers use to narrow the choices offered by a retailer. Consumers use two strategies—include and exclude—to narrow down a set. From a normative perspective, an include strategy should lead to the same outcome as an exclude strategy; however, research shows that strategy selection can bias the decision process (Irwin and Naylor 2009). We provide evidence that consumers are more likely to use an include (vs. exclude) strategy when faced with larger assortments and when they are in a maximizing mindset, and that this strategy can bias choice.

In study 1A, we presented participants with a planogram of either a small (6) or large (30) assortment of chocolates and asked them to narrow down their options by either circling the options they liked or crossing out options they did not like. Participants were more likely to use an include (vs. exclude) consideration set strategy in the large compared to the small assortments. Further, this strategy affected consideration set size: Participants had considerably smaller consideration sets after using an include strategy compared to an exclude strategy, which was especially the case when they were faced with a large assortment.

Study 1B replicated these findings using a different procedure and product category. Participants viewed a display of pens via computer and narrowed down a set of 32 (or 6) by dragging and dropping pens that they wanted to either include or exclude for/from further consideration. Again, participants were more likely to use an include strategy in the large compared to small assortment.

These results suggest that consumers shift to an include strategy when faced with a large assortment because large assortments change the decision process. In addition to creating more difficulty, large assortments also raise expectations (Diehl and Poyner 2010) and lead decision makers to focus on positive reasons to justify their choices (Sela, Berger, and Liu 2009). Thus, we expected maximizers, who are more prone to raise their expectations and feel the need to justify their choice, to be especially likely to use an include strategy.

Study 2 was a 2 (assortment: 30 vs. 6, between) x 2 (replicate: pen vs. chocolate, within) x 2 (choice order, between) mixed design in which we asked participants to narrow down their options by either circling the options they liked or crossing out options they did not like. Participants explained their screening process in written protocols. Next, they listed all the attributes used in the screening process and classified them as positive, negative, or neutral. Finally, participants made their choices, rated their regret and difficulty, and answered four questions from the maximizer/satisficer scale. Results showed the same main effect for assortment: Participants were more likely to use an include strategy when choosing from large assortments compared to small assortments. Further, these results were moderated by maximizer/satisficer. Plotting the continuous variable, we found that maximizers were more likely to choose an include strategy when assessing large compared to small assortments. Satisficers, on the other hand, did not show any differences. This change in strategy affected thoughts and attributes used in the decision-making process. When using an include strategy, participants listed proportionally more positive thoughts and attributes, and fewer negative thoughts and attributes compared to when using an exclude strategy. Since participants narrowed down the choice set, we also found no differences in regret or decision difficulty due to assortment size.

Study 3 asked mTurk participants to narrow down vacations in a 2 (assortment: 30 vs. 6) x 2 (mindset: maximize vs. satisfice) between-subjects design (mindset manipulation adapted from Ma and Roese, 2014). Participants dragged and dropped vacation destinations into a box that they labeled as either include or exclude. Again, those in the large assortment condition were more likely to include than those in the small assortment condition, which was moderated by maximize/satisficer. Maximizers were more likely to choose an include strategy for large assortments compared to small ones. Satisficers, on the other hand, did not exhibit any differences.

In sum, this research shows how choice overload systematically affects consideration set construction strategies used by consumers, biasing the decision process towards an include strategy. Consumers are more likely to use an include strategy when faced with larger assortments and when they are in a maximizing mindset. Thus, consumers in a maximizing mindset and facing more choice will process the choice differently: They will form a smaller consideration set, focus more on positive attributes and thoughts, and elaborate less on alternatives outside of the consideration set.

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***Choice Overload in Multi-Channel Environments: The Role of Deferred Trial***

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There has been a fundamental change in the consumer purchase process as more and more customers begin the shopping process for physical (non-digital) products on-line, and then interact with the physical product sometime later. The first major difference in this purchase process is that because online inventory shelf space is not subject to physical space limitations, many online retailers can offer very large assortments, which can lead to choice overload. Second, while the initial scan of the assortment is made online, the interaction with the consideration set is often navigated off line, sometimes in a store or showroom but more and more often at home (prompting the new label “the home dressing room”). Third, in this shopping process, there is a longer time separation between the initial scan of the assortment and interaction with the consideration set than for a purchase done entirely in a brick-and-mortar store because of the delivery time needed to ship the physical product.

In this research we are specifically interested in how the delay between the initial scan of the assortment and the delivery of the “try-on” or consideration set affects the perceived variety of the overall assortment, the perceived difficulty of making a choice from this try-on set, and the ultimate purchase likelihood and satisfaction. Since we know large assortments can be overwhelming and frustrating (Iyengar and Lepper 2000), and too much product information can lead to choice overload (Huffman and Kahn 1998), we hypothesize that this delay between the initial assortment scan and the interaction with the consideration set can be beneficial and lead to increased satisfaction and higher purchase intentions.

reasons motivate this hypothesis. First, since large assortments can induce feelings of regret for options not chosen, the delay may decontextualize the choice set. This decontextualization should minimize those feelings of regret since unselected options will be less accessible in memory after the passage of time. Second, the delay may influence consumers’ decision strategies in constructing their consideration sets. Familiarity with the product category is an important boundary condition of the overall effect of delay, in that benefits of delay will not hold for those familiar with the category who have stronger formulated preferences.

Additionally, we hypothesize that the benefits of this delay between decision stages may not be evident to consumers, who would prefer immediate delivery of the try-on set. This suggests the managerial implication that online retailers who are rushing to decrease delivery times to woo consumers may be paradoxically lessening purchase intentions in some categories. The results of three studies confirm our hypotheses.

In the first study, 313 mTurk participants were asked to evaluate a new company that enabled consumers to try the product (either shoes or glasses) at home before making any purchase decisions. Participants were asked to indicate a preference for one of two delivery options: delayed delivery (2–3 days) or an immediate delivery (within the hour), the latter of which was also described to half the participants as having a small fee, with no mention of cost for the other half). Participants also indicated how likely they would be to purchase the product if there was a delay and if there was no delay (question order randomized). No differences were observed between the results for shoes versus glasses, so we collapsed those results.

The results indicate that consumers had a preference for immediate delivery (except when it was costly) and thought they would be likelier to purchase if there was immediate (versus delayed) delivery. When immediate delivery did not have a fee, participants preferred immediate delivery to both delayed delivery and indifference. However, when immediate delivery had a cost, participants showed a preference for delayed delivery compared to immediate delivery and indifference. Moreover, participants believed they would be likelier to purchase if there was immediate delivery both in the cost and no-cost condition.

In study two, 120 participants selected pairs of glasses that they would consider purchasing from an online assortment, which they either tried on in the lab immediately or after a brief delay. This assortment contained 25 different styles with two to four colors each (the glasses were loaned to us for studies two and three from Warby Parker). Participants chose either three or five pairs from the online assortment and tried them on in the lab before indicating their satisfaction with the chosen set of glasses and stating purchase

likelihood. We collapsed the results of the set sizes (three, five) for the analyses. Contrary to what participants in study one believed, participants who experienced a delay in study two were more satisfied and listed higher purchase likelihoods than did the non-delay participants.

We next conducted a third study to examine if this pattern would emerge with a full delay. In study three, 310 participants completed a similar procedure to that in study two, except a) the participants in the delay condition experienced a two-day delay between seeing the assortment and the glasses they selected to try on, b) the assortment contained 30 styles, and c) participants also indicated their familiarity with Warby Parker (9-pt scale).

Replicating study two and in support of our hypotheses about familiarity, in a regression of delay and familiarity we observed a positive delay effect for satisfaction and purchase likelihood, but also a negative interaction effect of delay and familiarity for satisfaction and purchase likelihood that suggest the benefit of delay is stronger for participants with lower familiarity but weaker for those with higher familiarity with Warby Parker.

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## ***Individual Papers: Consumer Responses to Virtual Reality and Gamification***

### ***Product Gamification***

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Facilitating consumer-company interactions by utilizing game based mechanics is a recent phenomenon that attracted substantial awareness in business practice: until 2014, more than 70 % of the Forbes Global 2000 organizations may have at least one gamification application (Gartner, 2012). However academic research on the role of gamification in consumer-company interactions is silent on both its consequences and the underlying psychological process. This paper examines the preconditions, psychological mechanisms, and behavioral consequences of game-based consumer-company interactions. Specifically, the current research introduces the concept of *product gamification* whereby consumers “unlock” an object (such as a product, feature, or offer) in a gamified shopping context. We predict and show that product gamification can facilitate consumer preference and choice during the purchase process caused by the challenge that is induced by the gamified shopping experience. This research extends and generalizes recent work on the positive implications of induced effort such as the increased desirability of alternatives (Kim and Labroo 2011; Schrift, Netzer, and Kivetz 2011).

We offer empirical evidence from five studies on the influence of product gamification on consumer preferences and choice. The converging evidence from both field and lab data shows that product gamification relative to a non-gamified shopping process increases consumers’ preferences for the unlocked alternative and increases the number of chosen product features in a gamified shopping situation relative to non-gamified, i.e. traditional, shopping situations.

In study 1, 96 students were randomly assigned to either a product gamification or control condition. In the product gamification condition, participants played a beerpong game and were informed that an alternative chocolate bar is unlocked if they throw a ping

pong ball across a table into one of six (empty) cups successfully. Participants were free to trade their initial choice with the unlocked chocolate bar (which was identical except for the packaging color). Participants of the control condition completed a filler task, controlling for mere effort between conditions. As predicted, participants in the product gamification condition switched significantly more often to the unlocked chocolate bar relative to participants in the control condition ( $M_{\text{Game}}=60\%$ ,  $M_{\text{Control}}=39\%$ ,  $F(1,94)=4.120$ ,  $p < .05$ ).

A second study examined whether product gamification can convert non-buyers to buyers. 85 students ( $M_{\text{Age}}=22.36$ ,  $SD_{\text{Age}}=2.74$ , 41% females) were randomly assigned to either a product gamification or a control condition. Mirroring the experimental paradigm of Study 1, participants played a beerpong game to unlock the opportunity to buy a university branded coffee mug for 2 Swiss Francs (which they had to pay on the spot). In line with our theorizing, participants in the product gamification condition relative to a control condition almost doubled the choice rate for the university coffee mug ( $M_{\text{Game}}=58\%$ ,  $M_{\text{Control}}=33\%$ ,  $F(1,83)=5.686$ ,  $p < .05$ ). More importantly, the number of beerpong throws had a significant positive influence on the likelihood to make a coffee mug purchase ( $\beta_{\text{Throws}}=.20$ ,  $z(45)=3.58$ ,  $p = .05$ ), in support of the proposed challenge account.

The following three studies examined the psychological process of product gamification. Specifically, Study 3 manipulated the product gamification challenge between subjects (a more challenging 2x3 puzzle vs. an easy to solve 2x2 puzzle vs. control). Generalizing the previous results, we examined whether the effect wears off in a sequential choice situation. Specifically, we examined whether product gamification also affects consumers' option choice in a product customization context with customizable travel mugs. As predicted, the more challenging puzzle made consumers more likely to choose an unlocked travel mug option ( $B_{\text{GameChall-Control}}=.56$ ,  $z=2.02$ ,  $p < .05$ ;  $B_{\text{GameChall-GameEasy}}=.71$ ,  $z = 2.61$ ,  $p < .01$ ;  $SD_{\text{Intercept}} = .66$ ). More importantly, the gamification effect was reduced when no challenge was present ( $B_{\text{Control-GameEasy}}=.15$ ,  $z\text{-value}=.67$ ,  $p > .50$ ).

In Study 4, we tested the boundary condition whether the effect of a gamified unlocking of options decreases with an increasing number of to be unlocked options. Mirroring the experimental paradigm of Study 4, we found that participants in the product gamification condition were more likely to choose the unlocked feature relative to participants in the control condition ( $M_{\text{Game}}=79.1\%$ ,  $M_{\text{Control}}=71.3\%$ ;  $F(1,88)=5.63$ ,  $p < .05$ ). To provide a more rigorous test at the individual level, we estimated a linear mixed model with random intercept to account for repeated choices at the individual level. Supporting the between subjects results, we find that the unlocked travel mug options were chosen significantly more often in the product gamification condition relative to the control condition ( $B_{\text{Game}}=.20$ ,  $z = 2.41$ ,  $p < .05$ ;  $SD_{\text{Intercept}}=.31$ ). Providing evidence on the underlying process, a multilevel mediation model revealed that these effects are driven by a significant increase in consumers' perceived challenge of the customization experience (bootstrapped indirect effects of the gamification condition on feature choice:  $B_{\text{Indirect}}=.02$ ,  $p < .05$ ;  $B_{\text{Direct}}=.05$ ,  $p < .1$ ). Adding challenge as a predictor of feature choice reduced the direct effect to marginal significance ( $B_{\text{Game}}=.14$ ,  $z=1.75$ ,  $p < .1$ ,  $B_{\text{Challenge}}=.13$ ,  $p < .01$ ,  $SD_{\text{Intercept}}=.24$ ), indicating full mediation.

Finally, Study 5 ruled out the alternative explanation that consumers habitually learn to choose a non-default option in the context of a gamified product customization task with men's dress shirts. In line with our theorizing, Study 5 showed that consumers only choose those options that were unlocked in the gamified customization task, but did not choose those shirt features that were not locked during the product customization task.

To the best of the authors' knowledge, this is the first series of empirical studies using gamification elements in a consumer choice context. In a series of five studies based on both field and lab data, we provide converging evidence that unlocking product features in a gamified choice situation draws consumers attention, preference, and ultimate choice toward the gamified option. What is surprising is the influence of a gamified purchase situation on both varying conceptualizations of consumer preference (e.g., switching to another

option as in Study 1, actual purchase as in Study 2, or consumers' preference for specific options as in Studies 3 to 5), and that these effects were reproduced by a variety of games that required a different set of skills (e.g., beerpong, puzzles, racing game).

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***Are Salespeople or Signs more Persuasive? The Moderating Role of SES on Consumer Responses to Verbal vs. Written Product Information***

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Consumers regularly encounter product information in retail and service environments, whether conveyed verbally by a salesperson or visually on a sign. Although consumer responses to the retail environment have received empirical attention in recent years, there is a dearth of research on the relative efficacy of product claims depending on their mode of delivery. Furthermore, little research has investigated systematic differences in how individuals from high versus low socioeconomic backgrounds (SES) might respond to marketing information in retail contexts. We propose that while low SES individuals react more negatively to product claims that are spoken by a salesperson versus written on a sign or brochure, this pattern is reversed among high SES individuals. In addition to helping managers design effective marketing strategies, this research also has important consumer welfare implications; by gaining a better understanding of how underprivileged consumers react to different marketing stimuli, policymakers can design interventions to improve their consumer decision-making.

There is burgeoning evidence suggesting that the hardships associated with poverty promote alertness to threat, low interpersonal trust, and poor social relationships (Chen & Miller, 2012). Mirowsky & Ross (1983) argue that life in poverty, often characterized by powerlessness and the threat of victimization and exploitation, fosters mistrust. Further, Snibbe & Markus (2005) found that low SES individuals value resistance to social influence. As salespeople are often perceived as employing tactics of social influence (Campbell & Kirmani, 2000), we posit that underprivileged consumers would respond more negatively to verbal claims spoken by a salesperson versus written claims.

High SES individuals, on the other hand, expect to be treated with greater dignity and respect and show greater concern over the treatment they receive during service encounters (Leung et al., 1998). Based on the belief that people should be treated in accordance with their status (Berger et al., 1980), high SES individuals should experience greater enjoyment from being waited on by salespeople, and consequently believe that they are receiving individualized treatment when the product information is coming from an employee. Thus, we hypothesize that affluent consumers would respond more positively to verbal versus written claims.

Study 1 provides initial evidence that perceived economic resources systematically affect consumer responses to product claims spoken by salespeople. Notably, this is a very conservative test of our hypotheses as it examines whether even momentary feelings of resource scarcity could induce differential responses to a salesperson's claims. Study 1 utilized a single-factor (economic resources: scarcity, abundance, control) between-subjects design. Consistent with prior work, to manipulate socioeconomic status, participants first completed a task that primed a perceived resource state (Hill et al., 2012). Next, participants sampled a product –Frais Hand Sanitizer. Specifically, they were told that a salesperson for Frais was collecting information on behalf of the company. The salesperson brought each participant separately to the product display, where she told them specific claims about the product. After sampling the product, participants indicated their willingness to pay.

Results revealed a main effect of resource scarcity on WTP ( $p=.03$ ), such that participants in the economic abundance condition were willing to pay more than in the economic scarcity ( $p<.05$ ) or control condition ( $p<.02$ ); the scarcity and control conditions did not differ from one another ( $p>.60$ ).

In Study 2, we demonstrate that SES moderates consumer responses to verbal vs. written product claims using a 2 (modality: verbal, written) X continuous (childhood-SES) between-subjects design. Since past research indicates that growing up in poverty continues to impact consumption experiences even after one has recovered from material losses (Chakravarti, 2006), we measured childhood-SES weeks prior to the main study. We also added a written claim condition in which the salesperson did not state the product claim, but participants read the claim on a sign located on the display shelf.

Results revealed a significant Modality X SES interaction ( $p<.02$ ). Spotlight analyses at 1 SD above and below the mean-centered index of childhood-SES revealed that while low SES participants expressed a lower willingness to pay for the product in the verbal condition ( $p<.04$ ), high SES participants expressed a directionally higher willingness to pay for the product when the claim was conveyed by the salesperson ( $p<.20$ ).

We tested the underlying process in Study 3, a 2 (modality: verbal, written) X continuous (childhood-SES) design, in a different service context. After indicating their childhood-SES, participants were asked to imagine that their utilities company had contacted them to promote EZ-3, an energy pricing plan that would help them save money on their electric bill. Participants then received information about EZ-3 either via a printed brochure (on the screen) or through a service representative (using audio clips). Subsequently, participants indicated their likelihood of switching to EZ-3, their general impressions of EZ-3, as well as their confidence in EZ-3, which we combined into an overall evaluation of EZ-3 ( $\alpha=.93$ ). Participants also indicated the extent to which the service interaction felt authentic and made them feel like they were receiving preferential treatment.

Results demonstrated a significant Modality X SES interaction ( $p=.002$ ). Spotlight analyses at 1 SD above and below the mean-centered index of childhood-SES revealed that low SES participants gave lower evaluations of EZ-3 when the information was conveyed by a service representative ( $p<.05$ ), but high SES participants preferred the information to be conveyed by the employee ( $p=.03$ ). Furthermore, moderated mediation analyses show that for low SES individuals, their preference is driven by the increased authenticity of the written claim relative to the spoken one (95% CI=[-.42 to -.03]), while for high SES individuals their preference is driven by increased feelings of preferential treatment from a spoken claim by a salesperson (95% CI=[.02 to .22]).

In conclusion, across 3 studies we show that SES moderates the effectiveness of spoken versus written product claims. Whereas low SES consumers are more persuaded by product claims that they read in signs or brochures, interpersonal interactions with salespeople are more effective for high SES consumers. These findings have important implications for marketing managers in designing effective promotional strategies as well as policymakers in providing ways to optimize decision making among lower SES consumers.

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***The Cue-of-the-Cloud Effect: When Cues of Online Information Availability Increase Purchase Intentions and Choice***

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Little attention has been devoted to studying how online information influences *offline* purchasing decisions. Marketers commonly remind consumers that product information can be found online. For instance, a salesperson might mention a product's website during a sales encounter. We use the term 'cue-of-the-cloud' to refer to such reminders, and we examine the downstream consequences of these cues on consumers' offline decision making and choices.

While past work has highlighted some negative consequences of such reminders of the availability of online information (Sparrow, Liu, and Wegner 2011), we propose and find that when consumers are presented with relatively large amounts of unfamiliar product information, reminders of online information availability can enhance purchase intentions and behaviors. This occurs even when the online information is not actually acquired, and is driven by perceptions of external information availability, which in turn increases an internal sense of cognitive ease in processing information. We show this effect across four studies, including a field study and a study with a real consequential choice.

Our contribution is in demonstrating that a reminder of online availability of information can mitigate negative reactions to abundant information by engendering perceptions of information availability. This results in greater purchase intentions, as well as actual purchase and product choice. This finding shows a spillover effect of the Internet into *offline* purchasing situations. We also build upon work showing that cues of online information availability affect information processing, leading to reduced information encoding (Sparrow et al. 2011). Yet, in contrast to this past work, we show that a cue-of the cloud can have positive consequences.

Our theoretical framework proposes that the effects are driven by a sense of cognitive ease. The Internet is a more extensive and omnipresent source of information compared to traditional sources, like in-store signage (Ward 2013). Therefore, we posit that a reminder that information is available online enhances consumers' belief that they can acquire information, which in turn makes them feel that the information is easier to process. More specifically, when encountering abundant information that could de-motivate or confuse (Eppler and Mengis 2004; Jacoby 1977, 1984; Malhotra 1982), a cue-of-the-cloud leads consumers to feel that even if they do not know the information themselves, they can conveniently get this information externally. The information is "up there," in the cloud, and it need not be stored locally, in one's own mind. In turn, this reduced burden increases the sense of ease with handling the information, because the mind is freed up to address the information directly at hand.

We also demonstrate theoretically relevant moderators of the effects. The cue-of-the-cloud effect is more pronounced when a greater amount of information is provided during a purchase decision. Further, this effect is augmented among those higher in Need for Cognitive Closure (NFCC; Kruglanski 1989). This is because NFCC is associated with a preference for incorporating less information in a purchasing decision, and discomfort from processing abundant, unfamiliar product information is more likely for consumers who are higher in NFCC. As such, the beneficial effect of a cue-of-the-cloud on cognitive ease and purchase intentions is more likely to be observed for high-NFCC consumers.

Study 1 was a field study at a winery involving a 2 (product information: no-detail vs. high-detail) X 2 (cue-of-the-cloud vs. no-cue) between-subjects design. Customers were greeted by winery staff who either told them a lot of details about the wine, or very little detail. In another between-subjects manipulation, customers were either reminded that the wine information was available online, or no such reminder was provided. This cue occurred before the wine information was presented. We matched customers' receipts to their assigned condition. Consistent with our prediction, we observed a significant two-way interaction between the manipulations ( $F(1,129)=8.59, p<.01$ ). In the high-detail script, average revenue per customer was higher with the cue ( $M=\$25.28$ ) versus without the cue ( $M=\$14.20; t(129)=6.89, p<.01$ ), but this effect was attenuated with the low-detail script ( $M_{\text{Cue}}=\$10.86$  vs.  $M_{\text{No-Cue}}=\$18.95$ ).

In Study 2, we conceptually replicated this result in a scenario-based study involving a sleep aid product that was unfamiliar to participants. We measured participants' intention to purchase the product (on a 7-point scale) after exposure to product information and the cue-of-the-cloud, both manipulated between-subjects. Consistent with Study 1, when a lot of product information was

provided, purchase intentions were higher with the cue-of-the-cloud ( $M_{\text{Cue}}=4.99$  vs.  $M_{\text{No-Cue}}=4.17$ ;  $t(163)=4.46$ ,  $p<.05$ ), but this effect was attenuated when less product detail was provided (interaction of the two manipulations:  $F(1,163)=4.64$ ,  $p<.05$ ).

Study 3 tested the process mechanism through a mediation analysis. Participants read a winery scenario, similar to the field study, and indicated their intention to purchase wine on a 7-point scale. When a lot of wine information was provided, purchase intentions were higher with the cue-of-the-cloud ( $M_{\text{Cue}}=5.92$  vs.  $M_{\text{No-Cue}}=4.68$ ;  $t(118)=10.20$ ,  $p<.001$ ), but this effect was attenuated with a low-detail script (interaction of the two manipulations:  $F(1,118)=4.19$ ,  $p<.05$ ). The mediation analysis supported a serial mediator model, whereby when provided a lot of wine information, the cue-of-the-cloud enhanced perceived information availability, which enhanced cognitive ease, which in turn enhanced purchase intentions. This analysis exhibited complete mediation, with the 95% confidence interval excluding zero.

Finally, Study 4 tested the moderating role of NFCC. All participants encountered the high-detail script on the sleep aid product, and they were asked to choose either this unfamiliar product or a simple everyday school supply item to take home with them (i.e., a "real" choice). We measured NFCC as an individual-differences variable. Consistent with our prediction, for high-NFCC participants, choice share was higher with the cue-of-the-cloud (60.61%) versus without the cue (44.83%), but this effect was attenuated for low-NFCC participants (interaction of cue-of-the-cloud and NFCC:  $B=1.15$ , Wald test=5.68,  $p<.05$ ).

Taken together, this work demonstrates how modern technology can affect consumers' information processing in ways that mitigate the negative effects of abundant information on purchase intentions and choice. Our results can help managers by providing guidelines regarding when a cue-of-the-cloud is a suitable tactic, taking into account the types of consumers targeted and other elements of the purchase context.

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### ***Virtual Touch: How Computer Interfaces Impact Consumer Choice***

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In the digital world, purchase decisions and product choices are increasingly made on a variety of computer interfaces. For example, people can order take-out meals on their smartphone, ipad, laptop, desktop computer, etc. Some of these interfaces are touch-based (e.g., iPhone, iPad) whereas others are not (e.g., laptop, desktop computers). When using a touch-interface, consumers often make a choice by touching the image of the option they want; on a desktop, they typically indicate their choice by using a mouse to click. Will the act of choosing on different interfaces lead to differences in choices? This paper examines such a possibility.

We focus our investigation on a binary context similar to the ones widely examined by prior researchers (Dhar & Wertenbroch 2000; Shiv & Fedorikhin 1999), that is, one alternative is affect-laden (i.e., it elicits a strong positive affect, but has fewer positive cognitive

associations; e.g., cheese cake) and the other is cognitively superior (i.e., it has better cognitive benefits, but does not induce strong positive affect; e.g., fruit salad). The pair of products is presented pictorially on an iPad or a desktop. We predict that choosing on an iPad (vs. a desktop) enhances the choice share of the affect-laden alternative over the cognitively-superior one.

People may mentally stimulate the expected interactions with an object upon seeing it (Elder & Krishna, 2011; Tucker & Ellis, 1998; Shen & Sengupta, 2012). For example, the sight of a soccer ball makes people mentally simulate the action of kicking it with their foot. Decades of dual-system models (Esptein, 1993; Loewenstein, 1996; Metcalfe & Mischel, 1999; Pham, 1998) have shown a key difference between the reason-based, more utilitarian alternative and the feeling-based, more hedonic one: Relative to the former, the latter induces a spontaneous action tendency within consumers to “grab it directly”. This is, when consumers reach out to touch an option by their hand on an iPad, this action is very similar to the action that they would spontaneously simulate in their mind upon seeing the image of a hedonic product (i.e., an impulse to grab it – Shiv & Fedorikhin 1999). Reaching out to touch the hedonic product on a touch-interface is thus more congruent with the impulse than using a mouse to click on a non-touch interface, leading to a greater choice share.

We conducted five experiments to test our prediction. In Study 1 (N = 85), participants used either an iPad or a desktop to make a binary choice that was visually presented on the screen. The results were as predicted: Participants were more likely to choose cheesecake over salad when they made their choice on an iPad (95%) than on a desktop (73%;  $p < .01$ ).

Study 2 (N = 192) further demonstrated the effect of interface on reaction time. In that study, participants were told that after they saw any pair of pictures, they should *choose the smaller picture as quickly as possible*. After some practices, they went to the target pair (cheesecake vs. salad). We found that when participants made the choice on an iPad, they were quicker to make a choice when the cake (vs. the salad) was the correct response ( $p < .05$ ), whereas this difference disappeared when they made choice on desktop ( $F < 1$ ). The interaction effect was also significant ( $p < .05$ ).

Study 3 (N = 132) further replicated our findings using similar stimuli (ice-cream vs. USB) and went a step forward to show that such an effect was not simply due to any other differences between an iPad or a desktop. Specifically, participants were assigned to three conditions: one on desktop and two on iPad. In the iPad conditions, half the participants made their choices by directly touching the pictures using their fingers (compatible with “grabbing the product directly”), whereas the other half made their choices by touching the pictures via an iPad touch pen (incompatible). As the latter iPad condition bears little resemblance to the mentally stimulated responses upon seeing a hedonic product, the choice of the hedonic product in this condition (58%) was similar to the desktop condition (60%) - both being significantly lower than the other iPad condition (80%;  $p < .05$ ).

Study 4 then tested the predicted effect using a moderator. Since people typically use their dominant hand to grab the object they want, using the dominant hand to choose on an iPad might match their spontaneous impulse of grabbing the hedonic product, whereas using the non-dominant hand to do so, might not. We recruited only participants those who were right-handed (N = 226). Participants were either instructed to use their right or left hand to choose between pictures of two types of food on the screen. As predicted, when they used their right hand to choose, they were more likely to choose a cupcake over blueberries on an iPad (69%) than on a desktop (52%,  $p = .07$ ). However, when they used their left hand to make their choice, such a pattern was not observed (35% vs. 48%,  $p = .16$ ). The interaction effect was significant ( $p = .02$ ). In addition, we also demonstrated that our effect in right hand condition was mediated by the increased desire to reach toward the hedonic food.

Study 5 (N = 224) examined whether our predicted effect held only when the products were presented pictorially. This is because that prior evidence only shows a strong link between “vision” and “action” such that the visual depiction of an object can activate the

mental simulation of interacting with the object, but not so strong between the name of the objects and the mentally simulated responses (Tucker & Ellis, 1998). As expected, when the two options were visually presented on the screen, participants were more likely to choose an ice-cream cup over a corn cup on an iPad than a desktop (71% vs. 50%,  $p = .02$ ). However, when the two foods were verbally presented (i.e., their names were shown), such an effect disappeared (60% vs. 69%, respectively, *n.s.*). The interaction effect was significant ( $p = .02$ ).

Taken together, the results of five experiments provide converging evidence for our prediction. These findings advance the current literature of mental simulation, affect-cognition choice conflict, and have rich implications in the new area concerning the influence of different digital interfaces on consumer behavior.

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## ***Individual Papers: The Effects of Message Cues and Frames on Persuasion***

### ***Exploring the Effectiveness of the Label "NEW" in Product Packaging and Advertising***

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Every day consumers are exposed to novel products. The label “new” is often used on product packages and in advertising of innovations, but how effective is it? In which circumstances is it good to make use of the label? Intuitively, it could be argued that the word “new” is not very informative and may not, in itself, trigger any consumer responses. In contrast, people are afraid of the unknown, and as such the label could invoke responses of avoidance within consumers. Too much novelty can give rise to feelings of anxiety (Berlyne, 1960) and can sometimes lead to lower trial probability (Steenkamp & Gielens, 2003). However it is also suggested that people have a drive to seek out information about novel products (Hirschman, 1980). Because the future is uncertain, exploring product innovations might be beneficial sometime later. In this research we empirically demonstrate that the presence of a simple verbal “new” label on product packages and in advertising is effective. Moreover, we show that its effect is driven by a boost in curiosity that instigates positive consumer responses.

In a first online experiment we found that a washing detergent of a familiar national brand was evaluated more positively with a “new” sticker on the bottle than without the sticker (between-subjects design,  $N = 65$ ). The new label led to a more positive product attitude, and to a greater purchase and word of mouth intention. As literature suggests, positive effects of novelty might be driven by exploration (Hirschman, 1980). This was tested explicitly in the follow-up studies.

In Study 2 we predicted that if the “new” label triggers exploration, the impact of the label on consumer responses should be similar to that of an exploration mindset. Therefore we manipulated the mindset of consumers, and had them focus on what was usual or unusual. We know from prior research that unusual circumstances instigate exploration (Berlyne, 1950; Verplanken & Wood, 2006), whereas habitual circumstances lower the chance of detecting changes in the environment (Fazio, Ledbetter, & Towles-Schwen, 2000). The experiment had a 2 (mindset: habitual vs. exploration, between-subjects) x 2 (label: no label vs. new label, between-subjects) x 2 (product: tea, vitamin drink, within-subjects) mixed design. Participants ( $N = 154$ ) were recruited online through a market research agency and were requested to give their opinion about several products after describing what was usual (or unusual) about the day. Overall, the products were liked more (i.e., product attitude, brand attitude or purchase intention) in the exploration mindset condition than in the habitual mindset condition; and more with the new label than without. Most importantly,

individuals with a habitual mindset who saw the products with a new label liked the products more than those with a habitual mindset who saw the products without label. As expected, the new label boosted product liking to the level of those in the exploration mindset, indicating it had a similar effect.

Direct evidence for the impact of the new label on exploration is provided by Study 3 in which eye movements of participants (N = 132) were tracked while they scrolled through an online magazine containing several advertisements. The lab experiment had a 2 (label: no label vs. new label) x 2 (advertising clutter: absent vs present) between-subjects design. We measured attention for the brand elements (Pieters, Warlop, & Wedel, 2002) in the target advertisements. For half of all participants the target advertisements were presented among four other advertisements that created advertising clutter. In line with earlier findings, advertising clutter reduced attention for the advertisements. However when the new label was present, attention was boosted to the level of participants who watched the advertisements without experiencing clutter. Hence, as in Study 2, it was demonstrated that the “new” label boosts exploration. Interestingly, the study points to real-life circumstances in which exploration or interest for marketing is low (i.e., advertising clutter) that make the label more effective.

Finally, in Study 4, we tested the label in the field. For one week, we organized a taste booth in a supermarket where consumers could walk by and try out a cup of a known chocolate drink. The bottles at the booth were presented without label, a label “whole milk” (i.e., a control label, the drink was made of whole milk), or a label “new”. Hours of the day of label presentation were counterbalanced. We found that significantly more people visited the stand when the bottles were presented with the new label than with the control label or without label. Visitors who had tasted the product were requested to fill in a questionnaire to evaluate the product (purchase intention, product attitude, taste, quality, price/quality perception). At the end of the questionnaire, they were invited to tell how they felt in the supermarket at that moment (including curiosity items, and filler items such as cold/warm). Overall we found that all dependent measures were significantly more positive when consumers had tasted the “new” product than in the other two conditions. Moreover, consumers in the “new” condition felt more curious, and all positive evaluations were contingent on that feeling.

In sum, we find that a “new” label on product packages and in advertising gives rise to positive feelings towards the observed product. We show that the new label triggers an explorative or curious mindset in consumers, both by measuring and manipulating exploration. This is in line with theories (Berlyne, 1960; Hirschman, 1980) and empirical research (Steenkamp & Gielens, 2003) about novelty seeking suggesting that moderate product novelty gives rise to positive consumer responses. In further research it could be investigated explicitly whether the label is more effective for incremental changes in products (e.g., line extensions) rather than radically new products. It is remarkable that the “new” cue did not lose its influence on decision making when intrinsic cues, such as taste, were made available. The “new” cue even biased taste perception, like price does (Plassmann, O'Doherty, Shiv, & Rangel, 2008). It could be investigated how the cue can be turned off to make judgments more “rational”.

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### ***Giving by the Bucket, Taking by the Grain: The Motivational Gap between Health Communicators and Consumers***

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Health campaigns are often limited in their impact (Evans 2006), especially when they employ assertive language (Dillard and Shen 2005; Grandpre et al. 2003; Quick and Considine 2008). Research has recently developed around the need for effective health

communication (e.g., Bryan, Karlan, and Nelson 2010; Fishbach and Dhar 2005; John, Loewenstein, and Volpp 2012). The current research reveals a motivational gap between health communicators and consumers to explain why health communication is oftentimes ineffective.

Linguistically speaking, the type of messages in health communication is advice. Advice situations are ground for asymmetrical motivations, such that the advice giver perceives herself to be at a higher position than the advice receiver (Hansun 2005; Waring 2005, 2007), whereas consumers perceive health communication as intrusive (DeCapua and Dunham 1993) and that it does not presuppose control of the speaker over the outcomes (Hansun 2005). Thus, advice, especially in health communication, is a fertile ground for conflicts. We propose that one of the key reasons for this conflict is a gap between the motivations of advice givers and advice receivers. Following Searle (1969), we make a distinction between two constructs: (1) addressee's objective need for advice and (2) addressee's subjective wish for advice. In many cases advice givers are not concerned about, nor take into account the addressee's wish for advice (Locher and Hoffmann 2006). We suggest that when making their choice of the degree of assertiveness, health communicators rely more on addressee's *need* for advice and less on addressee's wish for advice. Relying on need for advice, as advice givers perceive it, leads to use of assertive language because of perceived importance of the health issue (Kronrod, Grinstein and Wathieu 2012). Conversely, when reacting to advice, consumers base themselves mainly on their subjective *wish* for advice (MacGeorge et al. 2004) for simple egoistic reasons (Carpendale and Racine 2011).

First, we collected 3 evidences for our general predictions: **1.** Preliminary hard data collection demonstrates the ubiquity of assertive advice in health communication: an analysis of real health slogans (N=153) shows an astounding 42% of health slogans that are assertively phrased. **2.** In a survey among 56 health experts specializing in smoking cessation, participants answered the following question: "Do you think that smoking cessation messages should be: A. Assertive (e.g., "Quit Smoking!") or B. Non-Assertive (e.g., "Thank you for Not Smoking!")". Within this sample, 66% supported the assertive argument. **3.** Analysis of 330 Q&A on "Ask the Doctor" online forums revealed that doctor's assertiveness depends on patient's need for advice, rather than wish for advice (see table 1 for results).

Next we present 4 lab and semi-field studies involving the perspective of the advice givers and then of advice receivers. **Study 1** examines advice givers' perspective. Participants (N=66) read a description of an imaginary person, John, presenting him as either leading a healthy (e.g., John prefers walking or riding a bicycle to driving his car) or unhealthy (e.g., John prefers driving his car to walking or riding a bicycle) lifestyle. Then, participants rated John's need and wish for advice about his health. Next, participants indicated their preference for one of two messages encouraging people like John to exercise twice a week, using a 7-point semantic differential design with an assertive message ("To keep your weight and be healthy you must exercise twice a week!") and a non-assertive message ("To keep your weight and be healthy you could exercise twice a week") as anchors. Regression results suggest that participants' assertiveness choice depended significantly on their evaluation of John's need for advice, whereas John's wish for advice did not have an effect on assertiveness level. In **Study 2**, 160 participants were randomly assigned to a 2 (low/high need for advice) by 2 (low/high wish for advice) design and chose between an assertive/non-assertive message to Kate, an imaginary protagonist, whose health condition was described as somewhat/very ill and her wish to get advice as high/low. Regression analysis indicates a significant weight for need for advice and a non-significant weight for wish for advice in preference for assertive message, even when respondents were *explicitly told* that Kate *does not want* advice. Moving to an advice receiver perspective, in **Study 3**, 82 participants read an assertive/non-assertive message encouraging them to exercise and indicated their intention to exercise more and their wish for health advice. Need for advice was measured by participants choosing a body form that most describes their own, on a figure chart. Regression analysis indicated a significant impact for *wish* for advice and no significant effect of *need* for advice on compliance with health messages. This result is in direct opposition to all our advice giver experimental results, emphasizing the gap in linguistic motivations between advice givers and receivers. **Study 4** is a field study where 200 students received an email from the main office encouraging them to add 5 minutes of abdominal exercise every day. The message was either assertive or non-assertive. A

week later, the students reported the number of days they added abdominal exercise and indicated their wish to receive health advice and their body form on the chart. Regression results indicate significant role for wish for advice in adherence with assertive health communication, with no significant role for need for advice.

Our results highlight the gap between the motivations of advice givers and receivers in health communication. This gap explains why health communication is oftentimes ineffective. This work contributes to research in consumer persuasion by suggesting a novel way to analyze health communication, beyond studying the potential positive impact of assertive language (Kronrod, Grinstein, and Wathieu 2012). Health communication is a specific case of social marketing and is different, for example, from environmental marketing in that the beneficiary of one's making healthier lifestyle choices is first and foremost the person who engages in the behavior, whereas often in social marketing the society/environment is the main beneficiary. By studying both advice giver's and receiver's perspective this work extends former studies, which focused only on message receivers, and provides a holistic view of health communication.

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***Selective Processing of Product Attributes in Spaced and Massed Presentation: The Influence of Attribute Alignability on Advertising Repetition and Memory.***

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Prior research has shown that the effectiveness of advertisement repetition on consumer's recall of ad information is contingent on the amount of time available to process information between presentations (i.e., spacing effect; for a meta-analysis on spacing effects see Janiszewski et al. 2003). It is often reported in this literature that spaced presentations (i.e., presentations interspaced by time or other stimuli) leads to superior learning and recall of repeated information than massed presentation (i.e., presentations in succession). Despite the robustness of the spacing effect, the vast majority of research supporting the advantage of spaced presentations has focused on studying spacing effects from a time interval perspective without consideration of intervals created by other stimuli. This is an important issue from a marketing standpoint as it is highly unlikely that consumers will encounter advertisements in absence of additional competing persuasive attempts. Thus, it remains to be answered under what conditions massed or spaced presentation involving interspacing of advertisements will enhance recall of brand information.

In this research, we develop a theoretical framework to describe how massed and spaced presentation that involve interspacing of advertisements trigger distinct information processing strategies which, in turn, influence learning and recall of repeated information. Drawing upon research in information processing strategies (level-of-processing theory; Craik and Lockhart 1972) and selective attention (structural-alignment; Gentner 1983), we show that the comparison process elicited by the presentation of a set of advertisements directs an individual's attention toward either alignable (i.e., attributes that are related to common aspects between the options) or nonalignable product attributes (i.e., attributes unique to each individual option) depending on the spacing structure of the presentation. More specifically, as massed presentation allows consumers to build familiarity and conceptual knowledge with existing knowledge before exposure to new information, this type of presentation order should aid the processing of new information via elaboration-based learning (i.e., making connections between new and old information based on similarities). Accordingly, consumers should selectively attend to alignable differences between the repeated stimuli as they allow consumers to compare between the two options through a common aspect that relates to both options. Alternatively, spaced repetition should enhance consumers' recall of advertisements through distinctiveness-based learning (i.e., becoming aware of the differences between new and old information) as

the order of repetition cues the existence of unique characteristics that distinguish the information from prior knowledge. In this case, nonalignable differences should become the focus of attention and learning as they highlight the attributes that are unique to each individual option. We test our proposed account in two experiments.

In Experiment 1, subjects participated in an unanticipated aided recall task after reviewing the product description of the two humidifiers that were first presented side-by-side on the computer screen, and then repeated three times in separate screens based on the specified order (massed vs. spaced). Each product was described by six product attributes (three alignable and three nonalignable) where the dependent measure was the number of attributes correctly recalled for each of the attribute from the list of product attribute presented as the second brand given that participants only became aware of similarities and differences when the second brand was presented. As predicted, we observed better performance in recall for the nonalignable attributes ( $M_{\text{Nonalign}} = 2.19$ ) than for the alignable attributes ( $M_{\text{Align}} = 1.71$ ;  $F(1, 62) = 6.37, p < .05$ ) in the spaced condition. In the massed condition, results were in the predicted direction in that respondents were more likely to show better recall for the alignable attributes ( $M_{\text{Align}} = 2.00$ ) than for the nonalignable attributes but this did not reach significance ( $M_{\text{Nonalign}} = 1.82$ ;  $F(1, 62) = .96, p = .33$ ). As it is plausible that the nonsignificant difference in the massed condition is a result of the mere exposure to both product descriptions provided to subjects prior to the repetition manipulation, we addressed this issue in Experiment 2 by removing the initial exposure of the two product descriptions which may have highlighted the unique characteristics of newly learned information leading participants respond to the learning tasks with a distinctiveness-based perspective in mind. In addition to the increase in the total number of product attributes (12 for each brand), a time-delay was added between advertisement repetition to show that our results hold under similar conditions in which the spacing literature reports a significant advantage of spaced repetition. The dependent measure was the number of attributes correctly recalled for each of the attribute categories from the list of product attributes presented in both brands, as selective attention toward new information may also be accompanied by selective retrieval of old information when creating semantic connections. In the spaced condition, respondents showed better recall for the nonalignable attributes ( $M_{\text{Nonalign}} = 6.96$ ) than for the alignable attributes ( $M_{\text{Align}} = 6.29$ ;  $F(1, 94) = 3.92, p < .05$ ). In contrast, respondents showed better recall for the alignable attributes ( $M_{\text{Align}} = 7.62$ ) than for the nonalignable attributes ( $M_{\text{Nonalign}} = 6.70$ ;  $F(1, 94) = 6.95, p < .01$ ; Fig. 1) in the massed condition. Overall, these results provide support for the proposed account in that consumers are more likely to learn new information through distinctiveness (elaboration) when repetitions are spaced (massed), resulting in enhanced recall for nonalignable (alignable) attribute information.

Counter to the prevailing knowledge in prior literature, this research demonstrates that massed presentation, in addition to spaced presentation, may also lead to better recall of repeated information. We develop a theoretical framework to describe how massed and spaced presentation induces different types of information processing strategies, leading consumers to more selectively process repeated information. In response to calls for research to gain better understanding of the underlying mechanisms of the spacing effect, we connect the literatures on advertisement repetition effects and information processing strategies and provide new insights that examine their joint effects on learning and recall. Our results are of particular importance for products and services in which the attributes (alignable vs. nonalignable) used by consumers to form their preferences among choice options is well known.

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### ***The Effects of Religiosity and Health Message Framing on Persuasion***

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Religious beliefs drastically shape people's everyday life and have been shown to influence consumers' attitudes and behaviors in the health domain. For example, religious belief often shapes consumers' dietary considerations and helps consumers cope with negative events (e.g., Kay, Moscovitch, and Laurin 2010). Despite its prevalent influence on consumer health behavior, scant research has examined the effect of religiosity. To fill this gap, the current research sheds light on how religious beliefs influence the effectiveness of the health message as a function of message framing. Specifically, the current research investigates which health message frame (gain vs. loss) is more effective among consumers who hold strong religious beliefs (i.e., high religiosity).

We posit that high religiosity people will be more persuaded by loss-framed as opposed to gain-framed messages. Previous research has shown that religious concepts such as believing in God lower personal control (McIntosh et al. 1985; Pargament and DeRosa 1985; Pargament et al. 1982; Spilka and Schmidt 1983) because high religiosity people hold beliefs that God has control over the outcomes. In addition, previous research has shown that fear (vs. anger), typically characterized by appraisals of lack of personal control leads consumers to be more responsive to loss (vs. gain)-framed messages (Gerend and Maner 2011). Furthermore, previous research has demonstrated that "powerlessness is accompanied by perceived loss of control over one's own behavior" (Rucker and Galinsky 2008, p.258) and that individuals who feel powerless are more focused on threats and negative outcomes (Keltner et al. 2003), suggesting that they are cognitively operating in the domain of losses (Anderson and Galinsky 2006). The existing literature has also suggested that message effectiveness may be enhanced if tailored to an individual's locus of control such that for individuals with external (vs. internal) locus of control, the health message emphasizing one's own work to gain healthy outcomes was less effective (Holt, Clark, Kreuter, and Scharff 2000). Thus, we hypothesize that loss frame is more effective than gain frame for high religiosity consumers due to lowered perception of personal control. Across two experiments, we demonstrate that religiosity increases effectiveness of the loss (vs. gain) framed message in the health context.

Experiment 1 explored the effect of religiosity and health message frames on persuasion. We primed religiosity by asking participants to unscramble 10 five-word sentences (5 sentences containing religion-related words and 5 sentences containing neutral words [in the high religiosity condition] vs. 10 sentences containing neutral words [in the control condition]; Shariff and Norenzayan 2007). Next, participants were exposed to either a gain or loss framed product. In the gain (loss) frame condition, the advertisement message emphasized positive (negative) benefits (consequences) of (not) using a sunscreen (Keller 2006). After viewing the ads, participants evaluated the sunscreen used the scale by Jain and Maheswaran (2000). Results revealed a significant two-way interaction ( $F(1,109) = 3.72, p = .056$ ). Planned contrasts indicated that in the high religiosity condition, loss frame was more effective than gain frame ( $M_{\text{gain}} = 6.78, M_{\text{loss}} = 7.64; F(1,109) = 3.93, p = .05$ ). In the control condition, however, there was no difference ( $M_{\text{gain}} = 7.10, M_{\text{loss}} = 6.77; F(1,109) = .57, p > .46$ ), supporting our predictions. This finding provides evidence that supports our theorizing that the loss (vs. gain)-framed message is more effective to high religiosity consumers.

Experiment 2 examined the underlying process. We propose that religious beliefs allow consumers to be comfortable with low perceived personal control because high religiosity consumers frame God positively (Benson and Spilka 1973). If this theorizing constitutes the underlying process, the effects should be reversed (i.e., the gain (vs. loss) frame is more persuasive) when high religiosity consumers lead to frame God negatively. We reasoned that if consumers' beliefs regarding God are negative, they will engage in the compensatory process by increasing their personal control because low control is scary when God is negative. That is, activating negative God-thoughts will motivate them to reassert control because God is negative. Consequently, they will act like individuals who perceive the higher level of personal control and will be more persuaded by the gain frame. In contrast, we predict that when high religiosity consumers activate positive God thoughts, the effect will be replicated because they do not feel that they need to restore lowered perceived personal control. To test these hypotheses, the valence of God-related thoughts was manipulated by priming either positive religion words (Pichon et al. 2007) or negative religion words (Van Pachterbeke et al. 2011). The message

frame manipulation was identical to that of previous experiment. After seeing the ad, participants indicated their attitude. Religiosity was then measured using six items (Hill and Pargament 2003; Piedmont 2001, 2004). Results indicated that a three-way interaction was significant ( $F(1,101) = 7.98, p < .01$ ). None of other effects were significant ( $p > .34$ ). We then followed the procedure suggested by Fitzsimons (2008) and split the data into two groups based on the valence of God thoughts (positive vs. negative) manipulation. In both conditions, separate regressions were conducted on attitude with independent variables, religiosity, a dummy variable for message frame ('loss(0)'; 'gain(1)'), and their interaction. In the positive God-thoughts condition, the analyses revealed a significant two-way interaction ( $\beta = -.31, t(50) = -2.04, p = .05$ ) and that loss frame was more effective ( $\beta = -1.64; t(50) = -2.75, p = .01$ ) for high religiosity participants whereas there was no difference for the low religiosity participants ( $p > .87$ ). In the negative God-thoughts condition, the analyses revealed a significant two-way interaction ( $\beta = .33, t(51) = 1.97, p = .05$ ) and that gain frame was more effective ( $\beta = 1.79; t(51) = 2.59, p = .01$ ) whereas there was no difference for the low religiosity participants ( $p > .86$ ). This finding provides additional evidence in support of our theorizing.

Overall, our findings contribute to the consumer literature by providing evidence to understand the relationship between religiosity and persuasion as a function of health message frames. Second, to our knowledge, in health advertisement literature, it is one of the first investigating the effects of religiosity. In addition, this research has implications for practitioners and public policy makers by showing how they could utilize consumers' religious beliefs to increase effectiveness of health advertising.

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## ***Individual Papers: With a Goal in Mind: Goal Pursuit and Satiation***

### ***Making a Fresh Start Boosts Consumer Creativity***

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The heart of marketing innovation is creative solutions to consumer problems. Consumers' creative feedback has shown considerable impact on new product development and advertising campaigns (Lukas & Farrell, 2000; Coviello & Joseph, 2012; von Hippel, 1986). Finding ways to foster consumer creativity, that is "creative consumption practice as a departure from conventional consumption practice in a novel and functional way," provides an important arena for research (Burroughs & Mick, 2004, p. 403; Hauser et al., 2006; Simonton, 2000; Vernon, 1989).

Unfortunately, most consumers view themselves as uncreative. From childhood to adulthood, people who say they are creative drops from 95 to 5-percent (Lehrer, 2012). The decline in perceived creativity may result from repeated failed attempts in developing novel solutions across the lifespan (Silvia & Phillips, 2004; Brown & Dutton, 1995; Burroughs & Mick, 2004; George & Zhou, 2007). Consumers "get stuck" on obstacles, unable to see the bigger picture (De Dreu et al., 2009). Further, a societal emphasis on routine goal pursuit dampens creativity (Mueller et al., 2012, Vallacher & Wegner, 1986, Wood, 2010).

We posit that consumer creativity can be boosted by enabling consumers to make a fresh start. We argue that making a fresh start positively affects creativity because consumers leave behind past failures, focus on the future, and consider new strategies and goals (Schultz, Price, & Coulter, 2014). Consumers mentally reset; past failures are put out of mind empowering active future possibilities

(Seligman et al., 2013). Future focus enhances abstract construal heavily tied to creativity (Finke, 1995; Förster et al., 2004; Ward 1995).

We show making a fresh start boosts creative performance across four studies. Study 1 demonstrates prompting a fresh start following failure increases consumer creativity. We used a 2 (fresh start, control) x 2 (self-affirmation, no self-affirmation) between subjects design ( $n=136$  undergraduate students). Participants first engaged in the five-minute Remote Associations Test (RAT) commonly used to assess creative performance (Griskevicius et al., 2006, 2007; Mehta et al., 2012; Mednick, 1968; Vohs et al., 2012), and upon completion received (false) feedback saying they performed worse than average. In the fresh start condition participants read, “Start anew” and clicked to the next page; those in the control condition simply clicked to the next page. Next, half the participants were affirmed by writing about their top-ranked value and half not affirmed by writing about their 7<sup>th</sup> ranked value (Fein & Spencer, 1997). Participants again completed a five-minute RAT, and the number of correct items served as our creativity dependent variable. The analysis revealed the predicted main effect of the fresh start condition,  $F(1, 132) = 4.344, p < .05$ , with those participants in the fresh start condition significantly outperforming others on the second RAT ( $M_{\text{fresh}} = 3.451, SD = 3.49$ , vs.  $M_{\text{no fresh}} = 2.716, SD = 2.68$ ), suggesting that making a fresh start helps participants move past failure. We note no significant difference in performance between the self-affirmed and control group ( $b = 0.70, p > .05; R^2 = .04$ ).

Study 2 shows making a fresh start boosts participants’ creativity following failure in an unrelated domain (“intelligence”). Undergraduates ( $n=114$ ) took a five-minute math intelligence test (difficult GMAT problems). Upon completion, participants received false feedback, saying they performed worse than average. As in experiment 1, participants solved as many of 8 RAT associations as possible within six minutes with the number answered correctly serving as our dependent variable of creativity. Next, participants indicated the extent to which they agreed with the statement (1-7 scale), “I felt like I started fresh on task 2.” As expected, participants with stronger (vs. weaker) fresh start feelings performed significantly better on the RAT creativity task following failure at an unrelated task,  $b = .491, F(1, 110) = 12.109, p = .001$ . Making a fresh start following failure in a different domain boosted performance on a subsequent creative task

Study 3 primed individuals with making a fresh start to assess how this affects product idea generation. Following a failed math task, 161 undergraduate students were randomly assigned to the fresh start prime (wrote about opening a door to the future following acceptance to the business college) or the control (wrote about a movie). Participants generated as many novel uses for a paperclip within 3 minutes. As expected, we found more novel uses for a paper clip among individuals primed with a fresh start than among controls (with task performance as a covariate) suggesting that priming making a fresh start in an unrelated domain can also spur creative performance. Study 3 also demonstrated that individuals making a fresh start engaged in more abstract versus concrete thinking about behavioral actions,  $b = .790, F(1, 159) = 6.243, p = .01$ .

Lastly, a field study demonstrates a fresh start improves performance on a real-life creative task and failure is not a necessary antecedent. Thirty undergraduates participated in study 4. Exam 1 occurred after the first month of class, with the intervention a week before the second exam, offering an excellent opportunity to see how a fresh start intervention would affect performance in a real-world creative problem solving context. Participants were randomly assigned to the fresh start and control interventions. In the fresh start intervention participants were motivated to move forward and approach exam 2 as a fresh, new exam, while in the control condition, participants were encouraged to learn from exam 1 and apply those lessons to exam 2. As expected, participants in the fresh start intervention performed significantly better on the creative second exam than participants in the control intervention ( $M_{\text{fresh}} = 107.067, M_{\text{control}} = 102.433; b = .491, F(1, 28) = 2.845, p < .05$ ).

Across four studies, we show that making a fresh start boosts creativity following failure on a similar task, and failure on an unrelated task. In addition, making a fresh start in one domain, can boost abstract versus concrete thinking about actions and improve product

idea generation. Finally, a field study shows that making a fresh start between two real-world creative problem-solving tasks can boost performance.

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### ***The Effects of Brand Exposure on Goal Satiation and Perceived Goal Progress***

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Prior research finds that nonconscious exposure to brands result in behavior that is consistent with goals associated with those brands. For example, participants exposed to the Apple brand performed more creatively relative to both control participants and people exposed to the IBM brand (Fitzsimons et al. 2008). In another study, people exposed to the Walmart preferred thrifty products rather than more prestigious ones (Chartrand et al. 2008). But can brands also lead consumers to experience goal satiation? Based on research showing that people can experience goal satiation without making any real progress toward attaining their goal (McCulloch et al. 2011), it is proposed that brand exposure can satiate a previously primed brand-related goal.

In study 1, we tested whether exposure to the Apple brand could satiate a previously primed creativity goal. Seventy-five participants participated in a 2 (goal prime: creative vs. no goal)  $\times$  2 (brand: Apple vs. no brand) between-participant experiment. Goal prime was manipulated via a scrambled-sentence task (Chartrand and Bargh 1996) where participants were asked to make four-word sentences from five words (e.g., him cat often they meet”, where the correct sentence is “they meet him often”). In the no goal condition, all the words were neutral; in the creative condition, words that invoked creativity were embedded in the list.

Next participants were exposed to the Apple logo, or not, using a visual acuity task (Bargh and Chartrand 2000): participants were required to recall the total of numbers flashed on the center of the screen. Participants were also told that flashes would occur throughout the task, and that as soon as they saw the flash, they were to indicate whether it occurred on the right or left side of the screen by pressing the “/” or “z” key, respectively. In the Apple condition, each flash consisted of the Apple logo for 60 milliseconds followed by a backward mask. In the no brand condition, the Apple logo was replaced by a circle. Finally, participants were asked to generate unusual uses for a brick (Guilford et al. 1958), and the total number of uses generated served as our measure of creativity.

A two-way ANOVA with number of uses generated as the dependent variable, and goal prime and brand as the independent variables, revealed a significant interaction ( $F(1,71)=12.11, p<.001$ ). In the no brand condition, participants primed with a creative goal generated more unusual uses for a brick ( $M=8.70, SD=2.37$ ) relative to participants in the no goal condition ( $M=6.60, SD=2.46; F(1,71)=5.74, p=.02$ ). However, when participants were exposed to the Apple logo, those initially primed with a creative goal generated fewer uses ( $M=7.11, SD=2.27$ ) than participants in the no goal condition ( $M=9.30, SD=3.34; F(1,71)=6.39, p=.01$ ), indicating that brand exposure can satiate brand-related goals.

We aimed to replicate this finding in study 2 using a different brand: Walmart. We also examined the role of perceived goal progress based on research showing that when people focus on progress toward a goal, they temporarily disengage from that goal (Fishbach and Zhang 2008). Generally, people perceive goal progress by actively pursuing the goal, but simply intending to pursue a goal has a similar effect (Fishbach and Dhar 2005). Thus, we tested whether brand exposure makes people believe that they have made progress toward that goal, allowing them to disengage. To test this, one hundred and fifteen students participated in a 2 (prime: thrift goal vs. no goal)  $\times$  2 (brand: thrifty vs. no brand) between-participant experiment. Participants were first primed with a thrift goal or not using a scrambled sentence task similar to that described in study 1. Then, a thrifty brand (Walmart) was primed, or not, using a visual

acuity task, also similar to the one used in study 1. Perception of progress toward the thrift goal was then assessed by asking participants to indicate how much progress they believed they had made toward the achievement of the thrift goal, on a 7-point scale anchored by: 1="I have made very little progress toward this goal", and 7="I have made a significant amount of progress toward this goal." Finally, participants were told to imagine that they are throwing out their socks and buying new ones. Participants indicated their preference between the following options, using a 7-point scale anchored by: 1="Nike socks priced at \$5 for one pair", and 7="Hanes socks priced at \$6 for 2 pairs". Based on preference research (Chartrand et al. 2008), the pair of Hanes socks is the more thrifty option.

A two-way ANOVA with preference as the dependent variable and goal prime and brand as the independent variables revealed a significant interaction ( $F(1,111)=12.43, p<.01$ ). In the no brand condition, participants primed with a thrift goal showed a greater preference for the thrifty option ( $M=3.54, SD=2.50$ ) relative to those in the no goal condition ( $M=2.24, SD=1.33; F(1,111)=6.50, p=.01$ ). However, when participants were exposed to the Walmart brand, those initially primed with a thrift goal preferred the thrifty option less ( $M=2.48, SD=1.42$ ) than participants in the no goal condition ( $M=3.71, SD=2.13; F(1,111)=5.93, p=.02$ ), indicating that brand exposure can satiate goals.

There was also a significant effect of goal progress ( $F(1,111)=8.97, p<.01$ ). Participants primed with a thrift goal and subsequently exposed to the thrifty brand reported significantly higher progress toward achieving the thrift goal ( $M=5.52, SD=1.19$ ) relative to all other conditions:  $M_{\text{thrift goal/no brand}}=4.61, SD=.99, F(1,111)=11.09, p<.01$ ;  $M_{\text{no goal/thrifty brand}}=4.74, SD=.96; F(1,111)=8.45, p<.01$ ; and  $M_{\text{no goal/no brand}}=4.97, SD=.91; F(1,111)=4.15, p=.04$ . Thus, brand exposure increased perceived progress toward a brand-related goal, but only when the brand-related goal was initially primed: exposure to a brand in isolation of priming had no effect on perceived goal progress.

Using different brands, this research shows that brand exposure can satiate brand-related goals. Further, brands increase perceived progress towards a brand-related goal, but only in conditions where people are vulnerable to the goal satiation effect. Additional studies might consider whether the results hold for other brands. For example, can a prestigious brand (Lexus) satiate a prestige goal? Moderators, such as goal importance, should also be addressed in future research.

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### ***Justifying the Pain of Payment: A Process Based Explanation to Durable Goods Replacement Decisions***

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### **CONCEPTUALIZATION**

Extant literature has established the link between payment depreciation and consumption behavior (Gourville and Soman 1998), by pointing that reduced thoughts of payment positively impact the consumption experiences. Most of the studies in this broad domain focused on consumption benefits that are obtained from service goods (sports show, movies etc.) or consumption goods (wine etc.). Little can be said about how these findings can be generalized to durable goods context, where consumption benefits are reaped over the entire ownership horizon and the durable undergoes physical depreciation over time. In this paper, we question if reduced thoughts of payment indeed positively impact the consumption experiences. We answer the question by providing a process-based explanation to the effect and also attempt to reconcile some of differences present in the literature.

## **THEORETICAL BACKGROUND**

Payment depreciation or reduced thoughts of painful payment positively impact the consumption experiences as individuals perceive the consumption benefits to be obtained 'free' of cost. Other factors such as payment method also influences consumption experiences (Kamleitner 2008) as some payment methods are perceived to be more painful and salient (debit card, loan with installments) than others (credit card, cash down-payment).

In this paper, we focus on payment method and its influence on consumption behavior, specifically for durable goods.

Mental accounting concepts have been used extensively to explain individual level behavior (Soman 2001, Thaler 1985). In the context of durable goods, individuals maintain mental accounts to assess the value of the durable and to evaluate decisions such as replacement time, repair, trade-in etc.(Okada 2001, Heath and Fennema 1996). The mental account is opened at the time of purchasing the product and is closed when individuals obtain their complete 'money's worth' from the durable usage over time. Individuals exhibit aversion to replacing their durable till their mental account is closed or till they have obtained their 'money's worth' from its usage.

Existing studies have pointed out to contrasting effects of payment method on consumption experiences of durable goods (Hoelzl et al., 2011). On one hand, mental accounting concepts point out that reduced thoughts of payment (cash down payment) will lead to more positive evaluations of consumption experiences. On the other hand, effort-justification paradigm of cognitive dissonance (Festinger 1957) point out that increased thoughts of payment (loan with installments) will lead to more positive evaluations of consumption experiences as individuals tend to over-justify the goal (consumption benefits).

We attempt to reconcile this difference by providing a process-based explanation to the effect of payment method on i) consumption experiences and ii) replacement intentions. We also point out to a way of integrating theoretical insights from mental accounting and cognitive dissonance

## **CONTRIBUTION**

Several explanations exist for the mental accounting rules adopted by individuals. Individuals are known to be motivated to close their mental accounts by consuming the product benefits. Studies have not delved deeper into the process that explains 'how' and 'why' do individuals are motivated to close their mental accounts. In this paper, we attempt to understand these questions by focusing on durable goods context.

## **HYPOTHESES**

We posit that higher thoughts of painful payment are construed as an effort to achieve to the goal (consumption benefits). When individuals are asked to evaluate their consumption experiences, dissonance arises due to conflict between painful thoughts of payment and pleasurable thoughts of consumption (H4 and H4a). The dissonance is reduced by over-justifying the benefits of consumption (H2, H3, H3a). Contrary to existing findings, where higher consumption experiences of durable goods lead to higher likelihood to replace the durable good (Okada 2001), we posit that due to effort-justification, individuals intend to replace their durables slower when they experience higher consumption benefits (H1).

H1: For durable goods financed by cash, the replacement time is faster than those financed by loan.

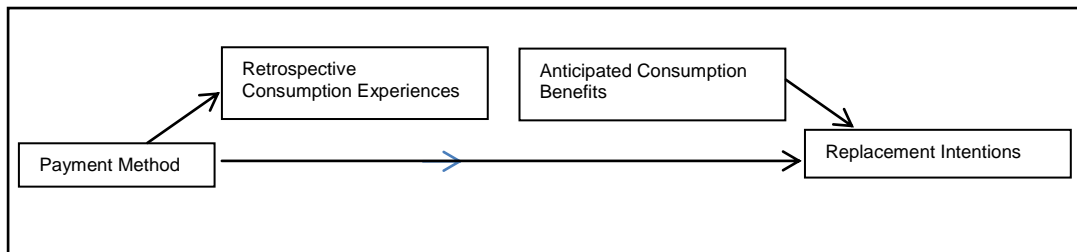
H2: The consumption experiences (retrospective) are rated more positive for durable goods financed by loan than for those financed by cash down payment

- H3: The anticipated future benefits are rated more positive for the durable goods financed by loan than for those financed by cash down payment
- H3a: The higher the retrospective consumption experiences the more is the positive anticipated future benefits for the durable goods.
- H4: The higher the thought of payment, higher is the dissonance felt, and hence higher is the effort-justification.
- H4a: The higher the thought of payment, the higher is the positive consumption evaluation.

## METHOD AND MAJOR FINDINGS

We conducted two studies to i) test the proposed effect as well as investigate the process underlying the same and ii) to tease out other possible alternative explanations for the proposed effect. In the first study, we attempted to test the hypotheses H1, H2, H3 (effect) and H3a (process). We conducted the study online using a 2X2X2 (payment method: *cash down-payment vs. loan with installments* X usage frequency: *high vs. low* X usage quality: *positive vs. negative*) between-subjects design. We measured consumption experiences (both retrospective and anticipated experiences) and replacement intentions. Consumption experiences were measured on a 7-point scale where individuals were asked to respond on the degree to which they obtained their money's worth (retrospective) and their expected future enjoyment (anticipated) from their durable. A total of 217 respondents participated in the study.

Our results showed support to our hypotheses. We found that individuals in the cash down payment scenario rated retrospective ( $M_{cash} < M_{loan}$ ,  $p = .022$ ) evaluations as less positive than those in loan manipulation. The time intended to replace was lower for cash scenario than for loan scenario ( $M_{cash} < M_{loan}$ ,  $p = .029$ ). We performed a path analysis to investigate the process underlying the effect and found that the payment method influenced the replacement intentions directly as well as indirectly: via consumption experiences.



Studies have pointed out that the payment method impacts perception of ownership with the product (Kamleitner and Erki 2012). If this applies, then the difference in intended replacement duration could be an outcome of perceived ownership with the durable and not due to the proposed explanation of effort-justification. In the second study, we account for this alternative explanation and attempt to establish that the consumption experiences and replacement intentions are influenced by payment method alone and not by perceived ownership. Additionally, we also assess if higher thoughts of painful payment are indeed resulting in dissonance reduction mechanisms.

In an online study, we randomly presented one of three scenarios to the respondents and measure perceived ownership, post-purchase dissonance and effort-justification. Our results supported our explanation i.e. individuals in cash scenario rated low on both post-purchase ( $M_{cash} < M_{loan}$ ,  $p = .0096$ ) and effort-justification ( $M_{cash} < M_{loan}$ ,  $p = .0006$ ) than those in loan scenario (support for H4 and H4a). We also found support to rule out alternative explanations i.e., there was no significant difference in perceived ownership between cash and loan scenario ( $M_{cash} < M_{loan}$ ,  $p = .43$ ).

## CONCLUSION

We attempted to identify conditions when reduced thoughts of payment lead to positive consumption experiences. We focused on

durable goods context and posited that when individuals construe the payments as an effort to achieve the goal (close mental account, by seeking consumption benefits), they tend to over-justify the benefits of the goal. Under such scenarios, increased thoughts of payment will on the contrary, lead to more positive evaluations of consumption experiences. We tested the proposition by looking at both consumption and replacement behavior for durable goods.

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### ***The Motivational Effects of Deliberative and Implemental Mindsets on Sequential Planning Across Domains***

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Consumers routinely switch mental gears, choosing and planning for multiple, unrelated goals sequentially. On a particular afternoon, for instance, a consumer may plan a travel itinerary for an upcoming holiday, then follow this task by creating a plan to do his or her weekly grocery shopping. Each activity of goal pursuit produces a particular cognitive mindset which can have significant effects on the consumer's thoughts and motivation for the task itself. Drawing and building upon Gollwitzer's influential theorizing (e.g., Gollwitzer 1990, 1999), consumer researchers have made the distinction between deliberative and implemental mindsets, the two distinct profiles of cognitive processes that embody most goal pursuit activities.

In this research, we study how different mindsets in the first domain influence the consumer's motivation to plan in the second domain. Prior research has shown that mindsets can have carryover effects on subsequent tasks (e.g., Bosmans et al. 2010). While these studies show that the effects produced by mindsets carry over, none (to our knowledge) have considered the important issue of how they might influence consumers' planning motivation in a second, entirely unrelated domain of goal pursuit.

Our main thesis in this research is that when compared with an implemental mindset in which consumers specify prospective actions entailed in goal pursuit, a deliberative mindset produced by answering questions regarding why the goal they seek to achieve are important to them will be more effective in enhancing planning motivation in the second domain. This is because the deliberation inculcated by the "why" mindset makes decision makers become open-minded and focus on the benefits of pursued goals. This improved top-down goal intention "spills over" to a subsequent unrelated goal pursuit activity (Wieber et al. 2014). On the other hand, an implemental or "how" mindset in the first task reduces open-mindedness and puts too much focus on situational specifics, which makes people become myopic and fail to benefit from the motivation boost resulting from the deliberative mindset (e.g., Bayuk et al. 2010). The proposition regarding why a deliberative mindset is more effective in improving planning motivation in a second domain is also derived from and extends prior literature on learning and problem solving which has shown that skill transfer often happens when people apply metacognitive strategies such as analytical thinking and self-explanation (Barnett and Ceci 2002).

We tested these hypotheses in four studies. In Study 1 (N=155), we randomly assigned participants to one of three conditions: deliberative mindset, implemental mindset, and control. In both mindset conditions, participants answered a number of questions concerning a self-selected forthcoming event. In the implemental mindset condition, participants provided details such as when, where, with whom, and the specific activities they would engage for the event. In the deliberative mindset condition, participants answered why the event was important to them, their overall goal and the objectives they wanted to achieve, along with why these objectives were important to them. The control group participants did nothing at this stage. All participants were then asked to indicate their motivation to plan to live a healthy life style next month by answering questions such as effort they would put into developing a



plan, the importance of developing an effective plan, motivation to engage in activities to live a healthy life, and effort to fit living a healthy life style into their daily schedule. Consistent with our hypothesis, people forming an abstract mindset in the first domain demonstrated the greatest motivation to plan living a healthy life style when compared with both concrete and control conditions ( $p < .05$ ); there was no difference between the latter two conditions.

In Study 2 (N=196), we included a second deliberative mindset condition in which participants formed a deliberative mindset as before but without answering “why” questions. It was found that engaging in a deliberative mindset without answering the “why” question was not as effective as the original deliberative mindset condition in increasing people’s motivation to plan for a second domain.

We argue the reason why a without-why deliberative mindset is not as effective as the with-why deliberative mindset is twofold. First, without considering the pros and cons of the pursued goal, the without-why deliberative mindset may be associated with open-mindedness to a much less extent when compared with a deliberative mindset with “why”. Second, because people do not consider the benefits and importance of the goal in the without-why deliberative mindset, there might be a lack of carry over boost for planning motivation. We further argue that when the second domain is important to the consumer, the benefits and the value of the goal should be highly accessible, which will serve as a motivation boost to increase goal striving and planning motivation in the domain (Nenkov and Gollwitzer 2012). As a result, the deliberative-without-why condition will perform similarly with the deliberative-with-why mindset condition in enhancing planning motivation in the second domain.

To test this proposition, in Study 3 (N=355) we manipulated goal importance. Specifically, after mindset manipulation in the first domain, we asked participants to rank order seven domains (e.g., living a healthy life style, saving/investing money for the future, etc.) based on how important each domain was to them. They were then randomly assigned to answer planning motivation questions for either their most or least important domain. It was found that when the second domain was the participant’s least important domain, there was no difference across mindset conditions. However, when the second domain was participants’ most important domain, both deliberative mindset conditions (with and without why questions) led to greater planning motivation than both the implemental and the control conditions. Finally, in Study 4 (N=263), we found that although a prior deliberative mindset is more effective when consumers subsequently plan for the longer-term in the second domain, an implemental mindset is more effective when people make subsequent short-term plans.

Results from four studies suggest the beneficial effect of engaging in deliberative mindset at a metacognitive level on increasing motivation to plan in a second irrelevant domain. We discuss the implications for both consumers and public policy makers.

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## ***Individual Papers: Perspectives: How Different Mindsets Influence Decisions***

### ***For Better or for Worse? Maximizing, Decision Involvement, and Objective Outcomes***

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When making decisions, individuals can be influenced by mindsets that alter the way in which the decisions are made. While

numerous types of mindsets have been explored in past research, we are particularly interested in the maximizing mindset, which causes individuals to engage in extensive comparison with the goal of achieving the best possible outcome (Ma and Roese 2014). Specifically, we examine whether a maximizing mindset actually leads to superior objective outcomes.

Past findings investigating whether maximizing enhances objective outcomes are mixed. For instance, on one hand, research has found that individuals who chronically held a maximizing mindset obtained jobs with higher salaries than those who did not chronically hold this mindset (Iyengar, Wells, and Schwartz 2006), and individuals primed with a maximizing mindset (compared to a control group) were more likely to select the best deal from an assortment of deal options (Ma and Roese 2014). However, on the other hand, researchers have also found a chronic maximizing mindset to be positively related to the incidence of negative life events stemming from poor decision making (Parker, Bruine de Bruin, and Fischhoff 2007), as well as lowered accuracy in predicting future outcomes (Jain, Bearden, and Filipowicz 2013).

How can these seemingly contradictory findings be reconciled? We propose that the results above can be understood by examining the type of underlying decision involvement associated with a maximizing mindset. Specifically, we hypothesize that the maximizing mindset is accompanied by a high degree of impression-relevant involvement. That is, maximizers are highly motivated to make favorable impressions on others who might evaluate their decisions, and thereby attempt to make decisions that will be justifiable to and approved by others (Johnson and Eagly 1989). When others' preferences are known, impression-involved individuals tend to make judgments congruent with them (Tetlock, Skitka, and Boettger 1989). Hence, when individuals in a maximizing mindset know what others want from them, and the criteria for making the "best" decision are relatively straightforward, they would make decisions that are consistent with those criteria, resulting in superior objective outcomes. However, when others' preferences are unknown, impression-involved individuals try to demonstrate that they have thoroughly considered all available inputs into their decision or judgment (Ahluwalia 2002; Tetlock and Boettger 1989). Therefore, when there is ambiguity in what constitutes the "best" decision, individuals in a maximizing mindset would be likely to consider all of the information relating to the decision, regardless of its diagnosticity, resulting in inferior objective outcomes. In other words, the dual effect of impression-relevant involvement on decision outcomes can potentially explain why maximizing has been found to have both a positive and a negative effect on objective outcomes.

To empirically test whether maximizing is positively associated with impression-relevant involvement, in the *first study* participants' chronic maximizing mindset tendencies (Diab, Gillespie, and Highhouse 2008) as well as their chronic impression-relevant involvement were assessed. The latter was assessed via Lennox and Wolfe's (1984) scale of cross-situational variability (extent to which individuals alter their behavior to be congruent with others' expectations), Fenigstein, Scheier, and Buss's (1975) measure of public self-consciousness (extent to which individuals are conscious of others' awareness of them), and Hewitt et al.'s (2003) perfectionistic self-presentation scale (extent to which individuals want to appear perfect and avoid appearing imperfect to others). Consistent with our expectations, chronic maximizing mindset tendencies were positively and significantly ( $p$ 's < .05) correlated with all measures of chronic impression-relevant involvement.

**Study 2** provided evidence for the relationship between maximizing and impression-relevant involvement using a choice paradigm and process measures. Participants were presented with an assortment of eight fictitious smartphones. Each smartphone had ratings along several different dimensions, and the ratings were calibrated such that one of the options was *optimal* (highest ratings on the diagnostic dimensions), and another was *justifiable* (relatively high on all dimensions or highest total rating points but inferior to the optimal option on the diagnostic dimensions). Participants were asked to choose a single phone from the assortment, followed by a filler task. Participants then completed the scales used in study 1 to measure chronic maximizing mindset tendencies and impression-relevant involvement.

The results revealed that maximizing mindset tendencies had a significant positive effect on the choice of the justifiable phone over the optimal phone, even though it was objectively inferior ( $b = .06, p < .01$ ). Furthermore, this effect was mediated by participants' chronic impression-relevant involvement (95% CI = .0022, .0366).

Since the negative effect of maximizing on objective outcomes appears to be driven by impression-relevant involvement and leads to choice of options that are more justifiable to others (even if sub-optimal), one might expect this effect to be attenuated when impression relevant concerns are removed. Following this line of reasoning, **study 3** manipulated the extent of impression management concerns in the situation via including public versus private conditions, based on past research suggesting impression management concerns are diminished in private (compared to public) settings (e.g. Ratner and Kahn 2002). The design was identical to that of study 2, with one alteration. Before participants made their smartphone choice, half were told that smartphones are very visible products that others notice (public condition), and half were told that smartphones are discrete products that others do not notice (private condition).

It was expected that in the public condition, where impression-relevant involvement is prominent, the previously observed effects of maximizing in study 2 would be replicated. However, in the private condition, where impression-relevant involvement is alleviated, such effects would be attenuated. Consistent with our predictions, maximizing had a significant positive effect on the choice of the justifiable phone over the optimal phone in the public condition ( $b = .15, p < .01$ ), but no effect in the private condition ( $b = .02, NS$ ).

Our results reconcile the seemingly conflicting findings of past research on maximizing and objective outcomes. By exploring the relationship between the maximizing mindset and impression-relevant involvement, we show that maximizing's effect on objective outcomes is neither consistently positive nor consistently negative. Rather, it is contingent on whether and how impression management concerns influence decision makers.

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### ***Social Exclusion Facilitates Perspective Taking***

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When we were observing or participating in an argument or a quarrel, the one sentence we could always encounter is "if you were in my shoes". Perspective taking is an important social skill for human beings, and we all love considerate people. However, in the academic field, there are many research showing the consequences but few exploring the antecedences of perspective taking. Instead of deliberately reminding the self to stand in other's shoes, we found that a negative experience of social exclusion could make people learn the lesson and perform better in perspective taking.

Social exclusion threatens people's basic need of belongingness and motivates people to restore belongingness (Baumeister & Leary, 1995; Williams, 2009). When being excluded, people would try to reestablish social connections (Maner et al., 2007) and affiliate more (Mead et al., 2011). They may even deliver unconscious mimicry of other's behaviors (Lakin, Chartrand, and Arkin, 2008). From a functional perspective, social exclusion should also facilitate perspective taking since it can help people get accepted by others more easily. Perspective taking requires one to adopt others' viewpoints and try to understand others (Parker & Axtell, 2001), and thus is essential for effective communication and smooth social interaction (Sassenrath, Sassenberg, & Scholl, 2014). We conducted five experiments to explore the effect of social exclusion on perspective taking, revealing that excluded people were more likely to take

other's spatial perspective, could better understand others' thoughts, and made more self-serving attributions for brand crisis and success.

In study 1, we tested effect of social exclusion on spatial perspective taking. Participants were firstly asked to participate in a virtual ball-tossing game and imagine the self playing the game with others in real life (Williams & Jarvis, 2006). Participants were randomly assigned into the exclusion or inclusion conditions. In the inclusion condition, participants got the ball for about one third of the time; in the exclusion condition, participants never got the ball after the first three tosses. Then participants were provided with a picture of a man sitting behind a table facing the participant (Lozano, Hard, & Tversky, 2006). On the table there were a book and a bottle. The book was on the right side and the bottle was on the left side of the participant, so for the man in the picture, the directions were reversed. Then participants were asked "In relation to the bottle, where is the book?". Answers including "left" were coded as perspective taking answers. Results indicated that excluded participants were more likely to answer from the perspective of the man in the picture.

In study 2, we adopted an action task to measure perspective taking. After the cyberball procedure, participants were asked to stick a note pad onto their forehead and draw an "E" on it (Steins & Wicklund, 1996). If the participant took the perspective of an external observer, the "E" would be oriented correctly when taken down; but if the participant took the egocentric perspective, the letter should have a reversed orientation. Results indicated that excluded participants were more likely to take an observer's perspective.

In study 3, we used semantic tasks as dependent variable measurements. Participants were provided with three short stories each involving two characters. One speaker used irony in his/her words while the receiver had no idea about it. Reading the story rendered the participants privileged information about the irony, while perspective taking required participants to ignore their privileged knowledge and answer questions relying on the receiver's understanding. Increased perspective taking after social exclusion was also found in this study.

In study 4, we related perspective taking with brand crisis. There is common self-serving bias in attribution. People make external attribution for failure and internal attribution for success of the self (Mezulis et al., 2004). But when making attributions for others, an "actor-observer asymmetry" exists. People normally make internal attribution of other's failure and external attribution of other's success (Malle, 2006). For product failure, sellers would report fault of their products less often than consumers (Folkes & Kotsos, 1986). Here we hypothesized that perspective taking would overcome the actor-observer asymmetry and direct consumers to make self-serving attributions of the brand. In other words, consumers would make more external attributions and consider the brand less responsible for the crisis after social exclusion.

Exclusion was manipulated by asking participants to recall and write down their own life experience of being excluded or included. Then we provided participants with a recent news report about MacDonald's adopting bad meat from one of its suppliers. Participants were asked to indicate to what extent MacDonald's should be responsible for the crisis and why. They were also asked to indicate their intention to make future consumption in MacDonald's. Results showed that social exclusion increased external attribution of the brand crisis. Excluded participants regarded MacDonald's as less responsible for the crisis and reported greater intention to induce future consumption.

In study 5, we adopted brand success to complete the attribution story. After exclusion manipulation same as study 4, participants would read about a recent news about JD.com, an online retailer who had just went on board. Then they were asked to indicate to what extent they believed that its success depended on its own efforts rather than the economic environment. Participants also answered questions about how much did they like the brand. As expected, excluded participants were more likely to make internal attributions

of the brand success and liked the brand more. The results of this study may also rule out the possible alternative explanation of empathy of study 4.

Our study found that social exclusion could facilitate perspective taking in multiple dimensions, and the results reveal a bright side of the negative experience of social exclusion.

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***Speech is Silver, Silence is Gold: Why Women (vs. Men) Remain Silent When a Cashier Miscalculates the Bill to Their Advantage***

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**Gender differences in unethical behavior**

Even though there is no absolute consensus about which gender is the ‘most unethical’, it is often presumed and found that women are more ethical than men (Ford & Richardson, 1994; O’Fallon & Butterfield, 2005). Women often get the benefit of the doubt because of their reputation for a selfless, sensitive nature (Eckel & Grossman, 1998; Vermeir & Van Kenhove, 2007). Gender socialization theory depicts women as tender-minded and altruistic, while men are seen as competitive and aggressive/assertive (Erat & Gneezy, 2012; Roxas & Stoneback, 2004). Nevertheless, there are reasons to believe that women do not behave as ethically as presumed. A recent study by Dalton and Ortegren (2011) demonstrated that women owe their ethical reputation to their tendency to answer in a socially desirable way. In addition, we found behavioral evidence of women being less ethical than men in two unrelated field experiments testing a passive form of unethical consumer behavior. Paradoxically, men’s more assertive nature turned out to be the underlying reason why they behaved more ethically than women.

**Studies**

The field experiments referred to in the previous paragraph were conducted to test under which circumstances people would engage in passive unethical behavior. Though the experiments were conducted for different research projects, the setup was similar: Two clerks sold products in a sales booth in the college halls of a large Western university. One clerk served the customer while the other observed the participant noting his/her gender. Each time a single customer bought a product from the sales booth, the selling clerk charged the customer a bit less than (s)he was actually due, while the observing clerk kept track of whether the customer reported the mistake or not. Not reporting the miscalculation is ‘coded’ as unethical behavior through passively benefiting at the expense of others (cfr. Consumer Ethics Scale;(Vitell & Muncy, 1992).

Both experiments demonstrated a significant gender difference, besides a significant main effect of the experimental conditions (there was no significant interaction effect in either one of the studies). In the first experiment (N=154; 52% female), significantly more females (43%) than males (27%) did not report the sales clerk’s mistake,  $X^2(1, N=154)=4.04, p=0.04, V=0.16$ . In the second experiment (N=204; 39% female), nearly two-thirds of the female participants (65%) did not report the sales clerk’s mistake compared to only 42% of the male participants,  $X^2(1, N=204)=9.51, p=0.002, V=0.22$ . A meta-analysis on the two studies confirmed the direction and magnitude of the effect (Lipsey & Wilson, 2001): The mean effect size (summary odds ratio) across the two studies was  $-.81 (z=-3.62; p<.001; 95\% CI [-1.26, -.37])$ . To our knowledge, these studies constitute the first behavioral evidence of females being less ethical than males.

To learn the cause of this effect, we ran an additional study making use of scenarios with pictures of a simulated store environment in which a cashier miscalculated the bill. Respondents had to complete the scenario: How would the customer react to the cashier's mistake? This specific way of indirect questioning was selected to minimize socially desirable responding (Broderick & Penwill, 1996; Catterall & Ibbotson, 2000). We conducted a pre-test (N=77; 46% female) with an open-ended question to gather a list of reactions. The answers comprised 'opportunistic' reactions (the customer sees the incident as a windfall and pays less), 'neutralizing' reactions (the customer blames the cashier for not doing his/her job correctly and pays less), 'honest' reactions (the customer tells the cashier he/she made a mistake and pays the correct amount) and 'not-daring' reactions (the customer thinks there is something wrong, but does not dare to react and pays less). The main study had a 2x2 (gender respondent, gender cashier) design. The respondents were presented with the same scenario and, in the end, with the list of reactions derived from the pre-test. For each reaction, respondents had to indicate how likely it was that the customer in the scenario would react like this (5-point Likert scale; 1= very unlikely, 5= very likely). In addition, the respondents completed Rathus (1973)' assertiveness scale, to investigate if the results could be explained by a personality trait that has been previously related to unethical behavior, and Paulhus (1988)' impression management scale, to check for social desirability bias.

Men and women responded fairly similar, but differed significantly with respect to the 'not-daring' reactions: Women (M= 3.51, SD= .93) considered it much more likely than men (M= 3.22, SD= .93) that the customer does not dare to react,  $F(1, 256)= 6.27, p= .013$ . This result might let us assume that the women in our field experiment did not dare to correct the cashier rather than being less ethical compared to men. To gain additional confidence in our findings, we investigated the mediating role of assertiveness. Men (M= 5.74, SD= 16.36) appear to be more assertive than women (M= -4.68, SD= 15.82) ( $t(258)= -5.20, p< .001$ ), which may explain our results. Bootstrap tests (Preacher & Hayes, 2004) were conducted to assess the simple mediation models. The analysis confirmed female participants consider it more likely that someone does not dare to correct the cashier than male participants, because of their lower assertiveness level ( $ab= -.14; 95\% \text{ CI } [-.24, -.05]$ ). Finally, the cashier's gender had a marginally significant impact,  $F(1, 256)= 3.71, p= .055$ . Our respondents consider it more likely that a customer would not dare to react to a male cashier (M= 3.47, SD= .93) as compared to a female cashier (M= 3.24, SD= .94). There was no significant interaction effect between the cashier's gender and the participant's gender,  $F(1, 256)= .007, p= .94$ .

In sum, though women do not intend to benefit at the expense of someone else, their lack of reaction makes them do. In a final study, we plan to investigate whether the gender difference disappears if we turn the experiment around and charge customers too much.

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### ***Cultural Diversity in Advertising and Representing Different Visions of America***

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It is important for brands to reflect the growing diversity of America in their advertising, particularly brands that reflect American culture and values. Despite this, little research has sought to understand how consumers respond to diversity in advertising. Past work has investigated how ethnic minorities respond to ads depicting individuals from their cultural group (Brumbaugh and Grier 2006; Lee, Fernandez, and Martin 2002; Ueltschy 2001). However, ads depicting cultural diversity also have the potential to reflect

American society and how different cultures view America, and so consumers may respond to these ads differently depending on their views of America in general.

System justification theory (Jost & Banaji 1994) posits that people are generally motivated to see one's social system (i.e., how society is structured and operates) favorably. However, there are individual differences in one's confidence in their social system, or in other words, how satisfied one is with the current state of society. Those who are high in system confidence are satisfied with their society and its dominant ideology, whereas those low in system confidence are less supportive of their society and the values it represents. Higher system confidence predicts a preference for brands that show explicit support for one's social system (Banfield et al 2011; Cutright et al. 2011) and brands that reflect the values of the society's dominant ideology (Shepherd, Chartrand, and Fitzsimons 2014).

### *Hypotheses*

Cultural diversity in advertising has the potential to reflect American society and embody a view of America that is either consistent or inconsistent with a consumer's beliefs; namely, their satisfaction with and confidence in American society. One way to interpret diversity in an ad is that the world celebrates American culture (e.g., Coca-Cola's "America the Beautiful" ad from the 2014 Super Bowl). This interpretation should be particularly affirming for consumers high in system confidence (vs. low in system confidence) who have favorable impressions of America and its global power and influence (H1). Another potential interpretation of diversity is that America is made up people from diverse cultures. This interpretation should be favorable to both those high and low in system confidence, as diversity is a long standing part of America's narrative as a country (valued by highs) and also reflects tolerance and multiculturalism (valued by lows; Shepherd et al. 2014) (H2).

### *Research*

In Study 1, 200 American participants first rated their level of confidence in their social system using the system justification scale (Kay and Jost 2003). They were then randomly assigned to either a baseline "no ad" condition, or our experimental condition where they viewed Coca-Cola's "America the Beautiful" ad from the 2014 Super Bowl, depicting people from various cultures singing "America the Beautiful" in different languages ("ad condition"). The study was run shortly after the commercial aired. Participants then rated their attitude toward Coca-Cola (reflects ideal values, ethical, likeable;  $\alpha = .90$ ). We predicted that those high in system confidence would rate Coca-Cola more favorably in the ad condition (H1) because it affirms their view of America and depicts the world as loving America. The two-way interaction was marginally significant, ( $\beta = .16$ ),  $t(196) = 1.82$ ,  $p = .07$ . Critically, (i) among those high in system confidence, viewing the ad significantly increased their evaluations of Coca-Cola relative to the no ad condition,  $t(196) = 3.70$ ,  $p < .001$ , and (ii) there was no effect among those low in system confidence,  $t(196) = 1.08$ ,  $p = .28$ .

How do those high in system confidence interpret this ad? Study 2 ( $n = 152$ ) was conducted to see if participants higher in system confidence see the ad as affirming the idea that the world loves America, and if this drives more positive brand evaluations. Using the same ad and dependent measure from Study 1, results showed that those higher in system confidence evaluated Coca-Cola more positively than lows, ( $\beta = .38$ ),  $t(149) = 5.07$ ,  $p < .001$  (H1), and this was mediated by their perception that the ad affirms America's greatness and that the world loves America (CI = .16 to .44).

The message that the world loves America is not likely to resonate with those low in system confidence, nor are they likely to interpret an ad depicting diversity in this way (Studies 1 and 2). However, those low in system confidence value diversity and tolerance (Shepherd et al. 2014), and so they may instead respond more positively to an ad that depicts diversity as a valued part of America. To test this, Study 3 ( $n = 390$ ) exposed participants to two different Levi's ads made for the study. Both ads depict a Muslim woman, with the tagline either saying "This July 4<sup>th</sup> celebrate the many faces of America" (America celebrates others condition) or "This July 4<sup>th</sup>

many faces of the world celebrate one America” (world celebrates America condition). A manipulation check found that these ads were correctly interpreted as meaning that America celebrates other cultures vs. different world cultures celebrate America’s greatness, respectively. Participants then evaluated the ad. The predicted two-way interaction was found, ( $\beta = .14$ ),  $t(384) = 1.82$ ,  $p = .03$ . As predicted, those high in system confidence liked the ad more in the “world celebrates America” condition compared to those low in system confidence (H1). In contrast, lows liked the “America celebrates others” ad significantly more than the “world celebrates America” ad,  $t(384) = -3.99$ ,  $p < .001$  (H2).

In short, cultural diversity in advertising has the potential to reflect a view of America that is either desirable, or undesirable to consumers, depending on how those consumers view America in general. We find that those who are satisfied and confident in America respond positively to two kinds of diversity: diversity suggesting that the world loves America, and diversity suggesting that America is made up of people from different cultures. Those less satisfied with American society and culture, in contrast, respond more positively to ads suggesting that that America is made up of different cultures, as opposed to the more nationalistic message that the world loves America. Implications are discussed.

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**OFF-SITE EVENT: The Great GatSCPpy Celebration at the Wrigley Mansion**  
**5:30pm-11:30pm**



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