

# Program Overview

## Thursday, 25 February 2016

8:00 am - 6:00 pm	Doctoral Consortium
2:00 pm - 8:00 pm	Registration
1:00 pm - 3:00 pm	Publications Committee
3:00 pm - 6:00 pm	SCP Executive Committee
6:00 pm - 8:00 pm	Reception
6:00 pm - 7:30 pm	Working Paper Session I

## Friday, 26 February 2016

7:00 am - 8:00 pm	Registration
7:30 am - 8:15 am	Breakfast
8:15 am - 9:30 am	Session 1
9:30 am - 9:45 am	Break
9:45 am - 10:45 am	PLENARY SESSION 1 – George Loewenstein, Carnegie Mellon University
10:45 am - 11:00 am	Break
11:00 am - 12:15 pm	Session 2
12:30 pm - 2:00 pm	LUNCHEON AND PRESIDENTIAL ADDRESS
2:15 pm - 3:30 pm	Session 3
3:30 pm - 3:45 pm	Break
3:45 pm - 5:00 pm	Session 4
4:00 pm - 4:55 pm	JCP AE RESEARCH AND REPORT MEETING
5:00 pm - 7:00 pm	JCP ERB MEETING
6:00 pm - 7:30 pm	Working Paper Session 2
6:00 pm - 8:00 pm	Reception

## Saturday, 27 February 2016

7:00 am - 3:45 pm	Registration
7:30 am - 8:15 am	Breakfast
8:15 am - 9:30 am	Session 5
9:30 am - 9:45 am	Break
9:45 am - 10:45 am	PLENARY SESSION 2 – Michael Platt, University of Pennsylvania
10:45 am - 11:00 am	Break
11:00 am - 12:15 pm	Session 6
12:30 pm - 2:00 pm	AWARDS AND BUSINESS LUNCHEON
2:15 pm - 3:30 pm	Session 7
3:00 pm - 5:00 pm	SCP ADVISORY PANEL MEETING
3:30 pm - 3:45 pm	Break
3:45 pm - 5:00 pm	Session 8
8:00 pm - 12:00 pm	"Fire and Ice" Fire dancing, magic, glass blowing, DJ, and a molecular bar.

# Thursday, 25 February 2016

**Doctoral Consortium**  
**8:00 am - 6:00 pm**  
**Tarpon Key**

**Registration**  
**2:00 pm - 8:00 pm**  
**Grand Palm Col. West**

**Publications Committee**  
**1:00 pm - 3:00 pm**  
**Blue Heron**

**SCP Executive Committee**  
**3:00 pm - 6:00 pm**  
**Blue Heron**

**Reception**  
**6:00 pm - 8:00 pm**  
**Banyan Breezeway**

**Working Paper Session I**  
**6:00 pm - 7:30 pm**  
**Banyan Breezeway**

# Friday, 26 February 2016

Registration  
7:00 am - 8:00 pm  
Grand Palm Col. West

Breakfast  
7:30 am - 8:15 am  
Grand Palm Col. West

Session 1  
8:15 am - 9:30 am

*Symposium: Beyond Personal Consumption: How Consumers Choose for Joint Consumption and Other's Consumption*

*Symposium: The Potential Pitfalls of Experiential Consumption*

*Symposium: A Left-leaning, Per Gram, Positively Natural, and Expensive Recipe for Healthiness: What on Earth Makes Us Think Food is Healthy?*

*Individual Papers: Measurement*

*Individual Papers: Context and Information*

Break  
9:30 am - 9:45 am  
Grand Palm Col. West

PLENARY SESSION 1 – George Loewenstein, Carnegie Mellon University  
9:45 am - 10:45 am  
Tarpon/Sawyer/Long

Break  
10:45 am - 11:00 am  
Grand Palm Col. West

Session 2  
11:00 am - 12:15 pm

*Symposium: Context Effects in Word-of-Mouth (WOM): How Innocuous Characteristics of Message Generation Influence Sharing and Persuasiveness*

*Symposium: Doing Well by Doing Better: Strategies to Increase Consumer Participation in Charitable Campaigns*

*Individual Papers: Selected Topics of Consumer Psychology*

*Individual Papers: Identity and Consumption*

*Individual Papers: Feelings in control: Affective influences on purchase and consumption decisions*

**LUNCHEON AND PRESIDENTIAL ADDRESS**

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

**Garden Courtyard/Banyan Bzwy**

**Session 3**

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

***Symposium: Protect Yourself: the Social, Emotional & Self-Protecting Consumer***

***Symposium: Flashing Forward: Antecedents and Consequences of Future-Self Connectedness***

***Individual Papers: Sampling and Experiences***

***Individual Papers: Simulation and Experiences***

***Individual Papers: Decision Environment and Consumption***

**Break**

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

**Grand Palm Col. West**

**Session 4**

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

***Symposium: Beyond the Choice Set: The Impact of Considering Outside Options***

***Symposium: Effects on Time and Time Effects: The Interplay of Consumer Behavior and Time***

***Individual Papers: The influence of financial considerations on consumer behavior***

***Individual Papers: Consumer Decision Making***

***Individual Papers: Evaluations and Attitudes***

**JCP AE RESEARCH AND REPORT MEETING**

**4:00 pm - 4:55 pm**

**Blue Heron**

**JCP ERB MEETING**

**5:00 pm - 7:00 pm**

**Tarpon Key**

**Working Paper Session 2**

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

**Banyan Breezeway**

**Reception**

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

**Banyan Breezeway**

# Saturday, 27 February 2016

Registration  
7:00 am - 3:45 pm  
Grand Palm Col. West

Breakfast  
7:30 am - 8:15 am  
Grand Palm Col. West

Session 5  
8:15 am - 9:30 am

***Symposium: When Products and Devices Seem Human and Humans Feel Like Machines: Antecedents of Anthropomorphism and Consequences of Dehumanization***

***Symposium: Time and Affect***

***Individual Papers: Consumption***

***Individual Papers: Better Living through Psychology***

***Individual Papers: In limbo: Influencing performance and decisions***

Break  
9:30 am - 9:45 am  
Grand Palm Col. West

PLENARY SESSION 2 – Michael Platt, University of Pennsylvania  
9:45 am - 10:45 am  
Tarpon/Sawyer/Long

Break  
10:45 am - 11:00 am  
Grand Palm Col. West

Session 6  
11:00 am - 12:15 pm

***Symposium: Judging Authenticity from Prosocial Gestures***

***Symposium: Experiencing experiences: Great strategies for designing, purchasing, and enjoying experiences***

***Individual Papers: Self and other-perspective in gifting, consuming, and advising***

***Individual Papers: Malleable Attitudes***

***Individual Papers: Others, Self, and the Mysterious***

AWARDS AND BUSINESS LUNCHEON  
12:30 - 2:00  
Garden Courtyard/Banyan Bzwy

Session 7

2:15 pm - 3:30 pm

***Symposium:*** Conversation Pieces, Shared Experiences, and Gifts: The Impact of Different Types of Social Consumption on Social Connection

***Symposium:*** The Greater Good: Behavioral Research with Social Value

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

***Individual Papers:*** Visual Effects in Consumption

***Individual Papers:*** Cognitive processes in judgment and decision-making

SCP ADVISORY PANEL MEETING

3:00 pm - 5:00 pm

Snowy Egret

Break

3:30 pm - 3:45 pm

Grand Palm Col. West

Session 8

3:45 pm - 5:00 pm

***Symposium:*** (Don't) Fear the Reaper: Mortality Salience as a Driver of Consumer Behavior

***Symposium:*** Marketing Actions that Change Behavior

***Individual Papers:*** External influences on consumer behavior: environment, society, and framing

***Individual Papers:*** Consumption, Decisions, Judgments and Construal Over Time

***Individual Papers:*** New insights on consumer influence in advertising and retailing

**"Fire and Ice" Fire dancing, magic, glass blowing, DJ, and a molecular bar. Theme attire encouraged.**

**Duncan McClellan Gallery, 2342 Emerson Ave. South, St. Petersburg, FL 33712**

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**Working Paper Session I**  
**6:00 pm - 7:30 pm**  
**Banyan Breezeway**

## ***Working Papers: Working Paper Session 1***

### ***The Early Bird Gets the Worm: Changing Behavior Via Reduced Attention Communication Vehicles***

Steven Dallas, New York University, USA\*

Gavan Fitzsimons, Duke University, USA

When a persuasive appeal is counter-attitudinal, the current common practice is to make the appeal as attention-grabbing and in-your-face as possible. However, the current research suggests that a better alternative is available. Specifically, the current research reports the results of a lab study and a field study that suggest that placing a counter-attitudinal or reactance-inducing persuasive stimulus in a location where it is quickly ignored is an effective path to change behavior. Thus, we find that habituation to a counter-attitudinal or reactance-inducing persuasive appeal can increase the effect of the appeal.

For more information contact: [sdallas@stern.nyu.edu](mailto:sdallas@stern.nyu.edu)

***The Effect of Targetability and Ethnic Identity on the Likeability of Ethnically Congruent Advertising***

J.P. James, Rutgers University, USA\*

The extant marketing literature demonstrates that ethnically similar casting and identity primes make ethnic advertising more preferred by the congruent ethnicity. However, the psychology of ethnic identity relative to the likeability of ethnically targeted advertising has not been studied. This paper leverages Distinctiveness Theory and Social Identity Theory to explain and this phenomenon. Findings show that the multicultural marketing communications are more likeable when the advertising is ethnically congruent and individuals feel less targeted by the advertising. Additionally, ethnic advertising is more likeable among individuals with a lower level of ethnic exploration and feel more targeted by the multicultural advertising.

For more information contact: [j.p.james@rutgers.edu](mailto:j.p.james@rutgers.edu)

***The Effects of Self-Control on Deal Proneness 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 using promotional-pricing strategies. The purpose of this paper is to help marketers decide how to make deals more attractive to consumers. We provide evidence from three online studies that consumers with depleted self-control are less likely to choose deals 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 deals. When choosing deals, consumers must determine which deal is best, and what to do to get it.

For more information contact: [Cansu.Karaduman@unil.ch](mailto:Cansu.Karaduman@unil.ch)

***Being a Geek is the New Chic: How Technology Products Signal High Social Status***

Perrine Desmichel, University of Lausanne\*

Bruno Kocher, University of Lausanne

Joseph Lajos, University of Lausanne

Lately high technology products have become trendy and always more expensive. The present research explores whether these products, like luxury products, can be considered as status goods, i.e. whether they increase the level of perceived social status of their owners. In two experiments we found convincing support for the fact that technology products are status goods, and that they signal a specific type of status. These findings are important for both the luxury and technology industries, which seek to differentiate themselves from each other.

For more information contact: [Perrine.Desmichel@unil.ch](mailto:Perrine.Desmichel@unil.ch)



***Eating Healthy but Pricey: Influence of Conflicting Goals on Food Choice***

Mingyue Zhang, Rutgers University, USA\*

Christine Ringler, Rutgers University, USA

When faced with various choices in daily life, consumers often find themselves in conflicting situations because the purchase might fulfill one goal while contradicting another. Increasing health consciousness continually reminds consumers to purchase more healthy foods. On the other hand, the goals of saving money become more important for adults. Thus the higher price of healthy foods and goals of saving money put consumers in a conflicting goal situation. In Study 1, we investigate how conflicting goals and self-control influence consumer decision-making and purchase of healthy but pricey food.

For more information contact: [mingyue010@gmail.com](mailto:mingyue010@gmail.com)

***If I Look at Myself, I May Stop Shopping: The Moderating Role of Visualization Perspective on Impulsive Buying.***

Carlos Bauer, The University of Texas at San Antonio, USA\*

Impulsive buying, and other consequences linked to lack of self-control have been extensively studied in the Marketing and Consumer Behavior literatures. Perhaps one of the most frequent explanations for impulsive buying is mental depletion. This study proposes a novel moderator for impulsive buying, visual perspective. When evaluating products or behaviors, either in the past or future, consumers may do so from a first or third-person perspective. We argue that changes in visualization particularly moving from the default 1st person to a 3rd person perspective decreases the consumers' likelihood to engage in impulsive buying. In doing so, we have also showed that the effects are not due to lack of mental resources. In addition, past literature suggest that resulting effects from variations in visual perspective are not due to changes in construal levels.

For more information contact: [carlosforphd@gmail.com](mailto:carlosforphd@gmail.com)

***Can I Extend my Enjoyment if I Change Perspectives? The Role of Visualization Perspective on Satiation***

Carlos Bauer, The University of Texas at San Antonio\*

Product satiation is a problem that marketers face constantly. As past studies have shown, satiation does not only devalue the product, but also motivates satiated consumers to seek variety. The purpose of this study is to put forth a novel variable that may help ameliorate the negative effects of satiation. As consumers evaluate a product or experience, they may do so either from the default first-person visual perspective or from a third-person visual perspective. Since repeated consumption increases satiation, we argue that visualizing such consumption from a third-person perspective slows the satiation process down compared to when such visualization takes place from a first-person perspective.

For more information contact: [carlosforphd@gmail.com](mailto:carlosforphd@gmail.com)

***The Effect of Product Availability on Choice in Different Display Environments***

Sarah Whitley, Boston University, USA\*

Remi Trudel, Boston University, USA

We show that product availability influences consumer choice differently depending on the retail environment. When product displays allow for empty space that signals scarcity, consumers interpret low product availability as a sign of popularity, driving choice of that option. Instead, consumers confer high product availability as an indirect sign of popularity among consumers when viewing the fully-stocked displays of efficient assortment retailers, prompting choice of the most available option.

For more information contact: scwhit@bu.edu

***The effect of display format on choice variety in the simultaneous multiple choice condition***

Jihye Park, Hankuk University of Foreign Studies\*

The purpose of this study was to examine the effect of product display format on choice variety in the simultaneous multiple choice condition. Results of three experiments revealed that consumers tended to choose more product variants in the segment display over in the mixed display. The effect of display format on choice variety was strengthened when product variants were similar, but the effect was weakened when assortment size increased. Results are applicable to stock management by SKU for promoting choice variety in simultaneous multiple purchases.

For more information contact: jihyepark@hufs.ac.kr

***Advertisements as Threats to Competence***

Raymond Lavoie, University of Manitoba, Canada\*

Kelley Main, University of Manitoba, Canada

This research examines when advertisements will be perceived as threats and how to mitigate the perceived threats. Study 1 supports a moderated mediation model in which advertisements for products from a brand that a person did not choose are perceived as threats to decision making competence which reduces affect. Threats can be perceived from advertisements that contain no claims and by consumers who do not identify with a competing brand. Time moderates this relationship by reducing perceived threat. In Study 2 we demonstrate that seeing an advertisement for a brand which consumers already own reduces their defensiveness towards competitor advertisements.

For more information contact: umlavoie@myumanitoba.ca

***Influence of addiction warnings on the consumption of everyday products and actions***

Matthew D. Meng, Boston University, USA\*

Remi Trudel, Boston University, USA

Carey K. Morewedge, Boston University, USA

The most accepted strategy for combating addiction is simply to draw attention to the fact that an item, activity, or substance may be addictive. Through different experimental methods, we show that framing an everyday product or action can actually backfire, resulting in an increase in the deleterious behavior. Specifically, framing the act of shopping as being addictive increases both impulsive shopping decisions and the amount consumers are willing to pay for products. Further, informing consumers that chocolate is addictive significantly increases the amount of chocolate subsequently consumed.

For more information contact: [mdmeng@bu.edu](mailto:mdmeng@bu.edu)

***Warm Brands as Relationship Partners: Social Exclusion and Consumer-Brand Relationships***

Soyoung Kim, University of Alberta, Canada\*  
Sarah Moore, University of Alberta, Canada  
Kyle Murray, University of Alberta, Canada

We focus on the social nature of brands by investigating the effect of social exclusion on consumers' short-term and long-term reconsumption of warm brands. We find that socially excluded consumers are more likely to be emotionally attached to warm brands than competent brands and thus are willing to reconsume these warm brands. Over and above the transient consumption of brands, our research suggests that cultivating relationships with warm brands can serve as an effective coping mechanism.

For more information contact: [soyoung@ualberta.ca](mailto:soyoung@ualberta.ca)

***Positive and Negative Effects of Service Recovery in the Absence of a Service Failure: The Mediating Effect of Surprise***

Marcus Wardley, University of Oregon, USA\*

Service failure and recovery has received extensive attention in the literature. However, little is known about the effects of a generalized service recovery effort on consumers who did not experience a service failure. This current paper fills the gap in the literature by examining a mass email recovery effort due to a website outage. We show that a service recovery involving an apology can lead to lower purchase intention in consumers who weren't affected by the service failure. However, when the apology is combined with a discount this increases purchase intention and trust. We show that surprise mediates this result.

For more information contact: [phdinfo@uoregon.edu](mailto:phdinfo@uoregon.edu)

***Gifts from Whom Matter: The Effect of Asymmetric Power Between Givers and Receivers on Their Preferences for Gifts***

Woo Jin Choi, University of Seoul, South Korea

Jae Hong Park, Kyung Hee University, South Korea

Terryn Lee, Seoul National University, South Korea\*

Past research on gift-giving behaviors has presumed the receiver-giver relationship as an equal and horizontal. However, in the real world, an unequal power distribution can exist in many giver-receiver relationships. This research suggests that the difference in interpersonal power between givers and receivers can predict their gift preferences.

For more information contact: [wjchoi@uos.ac.kr](mailto:wjchoi@uos.ac.kr)

***Loving to Be Different: How Romantic Love and Sexual Desire Influence the Desire to Be Different***

Chenyang Tang, Arizona State University, USA\*

This article examines the functionally independent roles of romantic love and sexual desire in influencing the desire to be different. It suggests that when in love (vs. lust), people take on a long-term perspective, which facilitates abstract thinking producing greater social distance and thereby enhances the desire to express difference. These findings offer initial insights into how marketers can make strategic use of romantic versus sex appeals to promote a diversity of products and opinions.

For more information contact: [Chenyang.Tang@asu.edu](mailto:Chenyang.Tang@asu.edu)

***The Purgatory of No Reply***

George Alba, Federal University of Rio Grande do Sul & Federal Institute of Rio Grande do Sul, Brazil\*

Caglar Irmak, University of Miami, USA

From dating proposals to product negotiations, consumers and companies sometimes do not receive any reply to their proposals from the relevant parties. We investigate the impact of receiving no reply on people's inference- and decision-making. Two studies demonstrate that after receiving no (vs. negative) reply consumers are more likely to update their personal profile at a dating website and reduce the asking price for their car at a greater amount. We show that this effect is mediated by lower perceived interest from the relevant party in the no (vs. negative) reply condition.

For more information contact: [george.alba@hotmail.com](mailto:george.alba@hotmail.com)

***How Creative is Jack of all Trades? The Effects of Multitasking on Consumer Creativity***

Sydney Chinchachokchai, University of Wisconsin - Eau Claire\*

In the world of fast changing environments, consumers have a tendency to perform more than one task at a time; for example, texting while watching TV, listening to the radio while doing homework. This multitasking behavior in consumers is inevitable and could affect

consumer creativity. Consumers sometimes encounter situations in which they need to use their problem-solving skill to alter a product to enhance its performance or appearance, or even to create a new product (creativity). This research examines the types and structures of task in multitasking and how they affect consumer creativity.

For more information contact: [chinchb@uwec.edu](mailto:chinchb@uwec.edu)

***Do Thanks Really Cost Nothing? When (High) Feelings of Gratitude Do Not Yield Better Relational Outcomes***

George Alba, Federal University of Rio Grande do Sul & Federal Institute of Rio Grande do Sul, Brazil\*

Rafael Lionello, Federal University of Rio Grande do Sul, Brazil

Many scholars advocate that gratitude increases psychological well-being in daily life, as well as it builds and preserves strong social relationships. Nevertheless, gratitude has been largely underestimated by consumer psychology literature. Our work shows that high levels of gratitude create a large window for consumers reciprocate. However, our findings indicate that gratitude-based reciprocal behaviors may be harmful to consumers, because consumers become more susceptible to make non-optimal decisions. In addition, we shed light to the fact that high levels of consumers' gratitude are not long lasting, making people reset the "gratitude clock" when they feel that they have already reciprocated.

For more information contact: [george.alba@hotmail.com](mailto:george.alba@hotmail.com)

***The Effect of Inferred Chances for Reaffiliation on Socially Excluded Consumers' Response to Scarcity Appeals***

Na Ri Yoon, Seoul National University, Korea\*

In response to social exclusion, individuals may show behaviors of either conformity or differentiation, depending on their cognitive assessment of chances for reaffiliation. The results reveal that when socially excluded individuals inferred low chances to re-enter the group, they indicated higher purchase intention for products unavailable to other consumers due to limited supply (supply-side scarcity) and not because they already have been purchased by many people (demand-side scarcity). However, individuals who inferred high chances for reacceptance showed similar preference between products in limited quantity due to prior consumption by others (demand-side scarcity) and products in scarcity because of restricted supply (supply-side scarcity).

(\*This paper is an extract from the author's master's thesis.)

For more information contact: [mentrol@snu.ac.kr](mailto:mentrol@snu.ac.kr)

***To-Date versus To-Go?: Exploring the Interplay of Self-Construal and Goal Framing in the Effectiveness of Advertising Campaigns for Charitable Giving***

Soyoung Lee, The University of Texas at Austin\*

Wei-Na Lee, The University of Texas at Austin

Yoon Hi Sung, The University of Texas at Austin

The study examines how individuals' self-construal (i.e., independent vs. interdependent) interacts with advertising messages featured in goal framing (i.e., to-go vs. to-date) for charitable donations in a shared goal context. Based on this, the current study aims to answer how self-construal and goal framing are associated and affect people's attitude and behavior. On the basis of the concept of self-construal and goal framing, a 2 (Self-construal: Independent vs. Interdependent)  $\times$  2 (Goal framing types: to-go framing vs. to-date framing) factorial design will be employed. Theoretical and empirical implications are discussed.

For more information contact: leesy8733@utexas.edu

***Business in Mind, Recklessness in Action : Incomplete Prior Decisions Increase Risk Taking on the Subsequent Behavior***

Jinwoo Kim, Seoul National University\*

Kyoungmi Lee, Seoul National University

It is common for consumers to postpone their resolutions on a specific choice to a later time. The current research focuses on the downstream consequences of such incomplete prior decisions (IPDs) and demonstrates how IPDs increases risk-taking tendencies in subsequent decision making. Two experiments were conducted to test the hypothesis. In Study 1a, participants in the incomplete condition showed higher preferences for a riskier option compared to participants in the complete condition. Study 1b also replicated such results. The current research will help understand how everyday behaviors, postponing decision making to a later time, affect their subsequent decision making.

For more information contact: jikim72@gmail.com

***When More People Give And When People Give More: Comparing Appeals To Express Support Versus Make A Difference***

Minjung Koo, Sungkyunkwan University

Ayelet Fishbach, University of Chicago

Hye Kyung Park, Community Chest of Korea\*

We compare two types of persuasive appeals in charitable giving: an appeal to "express support" for a social cause and an appeal to "make a difference" for that social cause. We show that an express-support appeal increases the participation rate, whereas a make-a-difference appeal increases the average contribution. It is because these two appeals tap into two different motivations people have to contribute to a social cause: to express commitment to the cause via widespread symbolic giving and to help the social organization make progress on solving a problem via a substantial resource investment.

For more information contact: soma0605@gmail.com

***Thinking About the Past Mitigates the Positive Effect of Vivid Information***

Ana Kono, University of Miami, USA\*

Juliano Laran, University of Miami, USA

Vivid information increases the desire for a product by facilitating consumers to imagine its consumption (Nisbett and Ross 1980). Our research explores if this effect is moderated by a consumer's temporal thinking orientation, such that when a consumer has a neutral thinking orientation, vivid information does indeed positively impact desire; but when a consumer is thinking about the past, vivid information negatively impacts desire. We suggest this occurs because vividness and thinking about the past can produce an imagined consumption that is too familiar, generating a sense of "been there, done that" which mitigates the desire for the product.

For more information contact: akono@bus.miami.edu

***Paying Memories of Kindness Forward: The Impact of Memory and Power on Prosocial Behavior***

Katina Kulow, University of Louisville, USA

Kara Bentley, University of South Carolina, USA\*

Priyali Rajagopal, University of South Carolina, USA

This research seeks to understand how increasing the salience of altruistic memories among consumers will promote prosocial behavior. More specifically, we investigate how memories of receiving (vs. giving) help may result in an increase in charitable giving among individuals who are low (vs. high) in power. We suggest that eliciting memories of being a beneficiary of someone else's goodwill will promote future prosocial behavior, particularly in contexts that will afford the consumer a perceived increase in power.

For more information contact: Kara.Bentley@grad.moore.sc.edu

***Stop Arguing! Interparental Conflict and Consumer Avoidance Behavior***

Mengmeng Liu, Temple University, USA\*

Maureen Morrin, Temple University, USA

Boyoun Chae, Temple University, USA

This article examines how interparental conflict experienced during one's childhood impacts consumer behavior during adulthood. Specifically, we hypothesize that exposure to high levels of interparental conflict early in life motivates such consumers to avoid products and services that exhibit a potential for future conflict or that are "tainted" with conflict from the past. Across four studies, we show that adults who report having witnessed higher levels of interparental conflict as children avoid products and services that may involve interpersonal conflict (e.g., price negotiation) as well those that are conflict-tainted (i.e., associated with the "residue" of prior disagreement).

For more information contact: mengmeng.liu@temple.edu

***The Benefits of Distraction: Distracting Ads Cue Consumers to Infer Product Liking through Metacognitive Inferences***

Daniel M. Zane, Ohio State University, USA\*

Robert W. Smith, Ohio State University, USA

Rebecca Walker Reczek, Ohio State University, USA

This research explores how a consumer's simultaneous exposure to a focal task and a non-focal advertisement in a multitasking setting affects his or her views of the advertisement and the advertised product based on metacognitive inferences from attention. Drawing from a lay theory that one's attention is diagnostic of one's interest in a stimulus, consumers infer that they are interested in an advertised product when the ad draws their attention more than expected. However, consumers' lay theories about attention are malleable and under certain circumstances, high perceived attention to an advertisement leads consumers to instead infer annoyance with the ad.

For more information contact: [zane.7@osu.edu](mailto:zane.7@osu.edu)

***The Role of Social Distance and Message Framing on Charitable Giving***

Kara Bentley, University of South Carolina, USA

Katina Kulow, University of Louisville, USA\*

Mitchel Murdock, University of South Carolina, USA

Two studies illustrate that positively-framed charitable appeals generate more donations than negatively-framed charitable appeals when victims are seen as socially distant. Additional evidence suggests that this effect is mediated by empath

For more information contact: [Kara.Bentley@grad.moore.sc.edu](mailto:Kara.Bentley@grad.moore.sc.edu)

***Are people happier when giving to others? A cross-cultural examination***

Merav Weiss-Sidi, Ben-Gurion University of the Negev, Israel\*

Hila Riemer, Ben-Gurion University of the Negev, Israel

Research shows that people are happier when spending on others than when spending on themselves. We examine this phenomenon across cultures. According to past research, individualists gain happiness from fulfilling individual goals. This would suggest that they should be happier when spending on themselves, while collectivists should be happier when spending on others. Our conceptualization, however, proposes a different effect: Because altruism aims, in fact, at fulfilling selfish needs, we expect individualists to be happier when spending on others. By contrast, collectivists' embedded tendency to help others should lessen this effect. One study supports our propositions. Future directions are discussed.

For more information contact: [meravws@gmail.com](mailto:meravws@gmail.com)



### ***Offering Initial Evidence of a Choice-Removal Effect***

Brian Gillespie, University of New Mexico\*

Ryall Carroll, St. John's University

Christian Otto, University of New Mexico

Consumers are often presented with choice sets in which they are required to compare multiple options simultaneously before making a final decision. It has therefore been assumed that removing options from a choice set prior to making a selection will minimize negative choice effects, increase decision ease, lead to optimal choice outcomes, and increase satisfaction with the final choice. The present research explores this phenomenon and offers evidence contrary to this assumption. Two studies support a choice-removal effect indicating that option removal shifts consumers' motivations for choice. These motivational shifts result in sub-optimal outcomes, decreased satisfaction with the choice, and fail to make the decision process easier for the consumer.

For more information contact: [briangillespie@unm.edu](mailto:briangillespie@unm.edu)

### ***Goal Failure Enhances Creativity***

Luke Nowlan, University of Miami, USA\*

Juliano Laran, University of Miami, USA

This research explores the consequences of goal failure on cognitive processes and subsequent performance in tasks unrelated to the goal. Specifically, we propose that failing at a goal enhances performance on tasks involving creativity. This occurs because goal failure leads to the consideration of an array of alternative goals and activities, which activates a flexible mindset and helps people be more creative. The findings offer a contribution to the goal pursuit literature by highlighting an unexplored consequence of goal failure. The findings also offer a contribution to the creativity literature by demonstrating a new antecedent of creativity.

For more information contact: [wnowlan@bus.miami.edu](mailto:wnowlan@bus.miami.edu)

### ***Choosing an Inferior Alternative: The Case of Disappearing “Inherited Options”***

Rusty Stough, Graduate Student, United States\*

Evan Polman, Assistant Professor, United States

People receive things which they do not choose; for example: a door prize at an event, or a free item from a store. Our research looks at how consumers make choices when these “inherited” items become unavailable. Previous research has shown consumers' choices are affected by subsequently unavailable options. We extend this work by examining items that consumers acquire despite their preferences. We found that when people experience a loss of an inherited option, they try to replace it with a similar option, to such an extent that they will choose an option that is inferior to other available options.

For more information contact: [rstough@wisc.edu](mailto:rstough@wisc.edu)

### ***Reacting to Moral Marketplace Claims: Consumer Moral Skepticism***

Jeff Rotman, Ivey Business School, Western University\*

Gail Leizerovici, Ivey Business School, Western University

June Cotte, Ivey Business School, Western University

Remi Trudel, Boston University, USA

The need for CSR has become increasingly important with consumers becoming progressively attentive to corporate actions. Through 7 studies, this research develops and validates a measure of Consumer Moral Skepticism (CMS), measuring a consumer's propensity to scrutinize marketplace moral claims. Study 1, 2a and 2b demonstrate convergent, discriminant, and predictive validity. Study 3 and 4 demonstrate that those high in CMS elaborate on claims which results in backlash when unbelievable claims are made. This backlash can be mitigated when the company has a trustworthy reputation (study 5). Lastly, study 6 provides behavioral evidence, demonstrating that CMS predicts actual purchasing behavior.

For more information contact: [jrotman@ivey.ca](mailto:jrotman@ivey.ca)

### ***Older and wiser? Exploring product placement vulnerability in older adults***

Beth Armstrong, Lancaster University, UK\*

Charlie Lewis, Lancaster University, UK

Product placements influence consumer brand attitude and product choice, though opinion divides over whether the influence is implicit or explicit. Aging can decrease explicit memory but priming remains stable, potentially increasing placement influence. The effect of placement exposure on the brand recall and product choice of 260 older and young adults was examined. Older adults who did not remember the placement showed no evidence of implicit effects. Recall had no influence on the choice of younger adults. However, the older participants who remembered the placement were more likely to select the product, suggesting that aging increases vulnerability.

For more information contact: [b.armstrong1@lancaster.ac.uk](mailto:b.armstrong1@lancaster.ac.uk)

### ***The embodied effects of marking action on consumer judgments***

Gunwoo Yoon, University of Miami, USA\*

Patrick Vargas, University of Illinois at Urbana-Champaign, USA\*

Our bodily experiences can exert an influence on how we think. This research examines whether the way a choice is physically experienced can influence how people respond to choice options. We manipulate bodily experiences at the point of choice by asking people to either draw check-marks, or X-marks when making choices. The results indicated that, compared to negatively connoted X-marking actions, performing positively connoted check-marking actions leads people to evaluate novel targets as more pleasant and to agree more with statements about familiar, controversial social policies. Differential marking actions with check and X-marks could shape how people make judgments.

For more information contact: [gunwooyoon@miami.edu](mailto:gunwooyoon@miami.edu)

***Want a taste?: Consumer Contamination in Food Advertisements***

Donya Shabgard, University of Manitoba, Canada\*

Kelley Main, University of Manitoba, Canada

Consumers encounter various advertisements in their day to day life, most of which contain images of food and desserts. In our research, we presented participants with one of three dessert advertisements, a bitten dessert, one cut in half, or a dessert left untouched. Our findings support the literature on consumer contamination showing that participants who viewed the bitten dessert found the advertisements to be unappealing, least appetizing, and most inappropriate for a healthy menu. We also find differences between individuals with and without dieting experience in their perceptions of the dessert.

For more information contact: [umshabgd@cc.umanitoba.ca](mailto:umshabgd@cc.umanitoba.ca)

***Fuel or food? Priming a performance mindset in absence of task achievement increases consumption and preferences for high-calorie foods***

Pierrick Gomez, NEOMA Business School\*

Dimitri Vasiljevic, NEOMA Business School\*

This research examines how priming the concept of performance influence food behavior beyond task achievement. In four studies, we show that priming the concept of performance increases consumption and preferences for high-calorie foods.

For more information contact: [pierrick.gomez@wanadoo.fr](mailto:pierrick.gomez@wanadoo.fr)

***The Role of Culture in Consumer Response to Negative Experiences***

Hila Riemer, Ben Gurion University, Israel\*

Oded Zafrani, Ben Gurion University, Israel\*

The goal of this study is to examine differences between individualists (independents) and collectivists (interdependents) in their responses to negative consumption experiences (e.g., their favorite team playing carelessly and losing the game; poor service at a restaurant). We propose that independents are more likely than interdependents to express intentions of negative behavior toward the experience provider following a negative experience. This is supported in two experiments, which additionally show that the reaction is mediated by negative emotions toward the experience provider and is driven by the existence of prior expectations. Future directions are discussed.

For more information contact: [Odedzaf@post.bgu.ac.il](mailto:Odedzaf@post.bgu.ac.il)

***Does Customer-Stranger Interaction Vary as a Function of Age in the Retail Context?***

Tabitha Thomas, Univesity of Otago, New Zealand\*

Kirsten Robertson, Univesity of Otago, New Zealand

Maree Thyne, Univesity of Otago, New Zealand

Preeti Krishnan-Lyndem, Indian Institute of Management, Bangalore

In the present research, we examine how customer-stranger interactions vary as a function of age in the offline retail context. Across three studies, we find that compared to younger customers, older customers engage more in stranger interactions and turn to strangers for advice and reassurance, ultimately treating strangers as a shopping companion.

For more information contact: [tabitha.thomas@otago.ac.nz](mailto:tabitha.thomas@otago.ac.nz)

***The Effects of color lightness on Ethical Behavior***

Eunmi Jeon, School of Business Sungkyunkwan University, Korea\*

Myungwoo Nam, School of Business Sungkyunkwan University, Korea\*

Our research aims to have better understanding of how change in lightness of image influences evaluation of pro-gay image. Two different predictions can be made with regard to how lightness of color affects ethical evaluations. In literature and religion, darkness is associated with evil and lightness is associated with good. For instance, Frank and Gilovich (1988) demonstrated that sports players wearing black are perceived as more violent than players wearing nonblack attires. Therefore, one can predict that darker images would lead people to evaluate pro-gay image to be less ethical. On the other hand, it could be argued that lighter image would prompt people to behave in more ethical manners. This would make them to be more sensitive to societal norms; hence, they would view lighter images containing pro-gay message to be less ethical.

For more information contact: [jem7453@gmail.com](mailto:jem7453@gmail.com)

***How do you feel?: Factors affecting quality of life in the social media context***

Seonjeong Ally Lee, Kent State University, USA\*

Well-being marketing is a business philosophy that guides companies to develop and implement marketing strategies to focus on enhancing customer well-being through the customer/product life cycle. With the exponential growth of social media these days, the purpose of this proposal is to examine the effectiveness of well-being marketing in the social media context, based on the self-determination theory as a theoretical background. This proposal attempts to identify (1) antecedents of customers' sense of well-being and (2) key outcomes of the sense of well-being in the social media context.

For more information contact: [slee89@kent.edu](mailto:slee89@kent.edu)

***‘Sorry, I’ve got a thing’: The interpersonal benefits of precommitment to personal goals***

Sarah Memmi, Duke University, USA\*

Jordan Etkin, Duke University, USA

Christine Moorman, Duke University, USA

Precommitment is a widely recognized self-control strategy that increases goal adherence by restricting future choices. Even when self-control is intact, however, consumers must regularly navigate interpersonal conflict in their social environments to pursue valued personal goals. This research demonstrates that when goal conflict is interpersonal, precommitments to a personal goal—in particular, precommitments whose consequences affect other people—increase goal adherence. We further demonstrate that this effect is driven by reduced selfishness for choosing a self-interested over a relational goal. We identify precommitment as an effective but overlooked strategy that can help consumers shield personal goals from competing interpersonal demands.

For more information contact: sarah.memmi@duke.edu

***Learning Lingo***

Sara Hanson, University of Oregon, USA

Troy Campell, University of Oregon, USA

Katie Mercurio, University of Oregon, USA\*

This research explores whether education and use of lingo, vocabulary or jargon related to a certain brand, product, or product category, influences consumers’ enjoyment and mastery of a product, as well as downstream marketing consequences. Study 1 shows that consumers who learn lingo about bottled water are willing to pay more for the bottled water than consumers who do not learn the lingo. Future research will test the proposed mechanism in a lab study using existing Star Wars fans and a field study at an art museum, while integrating the impact of lingo use and prior expertise as moderators.

For more information contact: skhanson@uoregon.edu

***Money Given Away is More Valuable***

Liane Nagengast, University of St. Gallen, Switzerland\*

Johannes Bauer, University of St. Gallen, Switzerland

Michael Norton, Harvard Business School, USA

Across various disciplines, research has analyzed the effectiveness of self-focused vs. other-focused (prosocial) bonuses in influencing individual behavior. The effectiveness of prosocial bonuses has been linked to the “warm glow” of giving, which suggests that people experience positive feelings from the act of “doing good”. We propose an additional motivation for why prosocial bonuses might influence behaviors, suggesting that peoples’ value perceptions differ depending on whether an equivalent bonus is spent on others or on oneself. Two laboratory experiments show that individuals overvalue other-focused compared to self-focused bonuses. These results have implications for the design of incentive schemes.

For more information contact: liane.nagengast@unisg.ch

***Sensitivity of CSR-Based Identification in the Event of Negative Publicity***

Sabine Einwiller, University of Vienna, Austria\*

Bettina Lis, University of Bayreuth, Germany

Sankar Sen, Baruch College, USA

Consumer-company (C-C) identification can protect attitudes in the event of negative publicity. In this research we analyze whether this protective effect is suspended if the negative information assails the attributes on which consumers' identification is based. These attributes may be corporate social responsibility (CSR) or corporate ability (CA) related. It shows that when consumers identify with a company because of CSR, attitudes deteriorate even more in the event of CSR misbehavior than when consumers do not identify with the firm. This boomerang effect does not occur when C-C identification is CA-based.

For more information contact: [sabine.einwiller@univie.ac.at](mailto:sabine.einwiller@univie.ac.at)

***Consumers' reliance on imagination moderates the effect of information on anticipated satisfaction***

Samuel Franssens, London Business School, UK\*

Simona Botti, London Business School, UK

Information has been shown to positively affect consumers' anticipated satisfaction with upcoming experiences because it gives consumers a sense of control. We predicted that consumers derive a sense of control from fantasizing about upcoming experiences and would therefore have a lower need for control through information. Three experiments indeed show that the positive effect of information on anticipated satisfaction decreases or even reverses for consumers with an imaginative mind-set.

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

***Reducing Product Uncertainty by Increasing It: The Metacognitive Processing of Doubt-Inducing Consumer-Generated Product Reviews***

Christilene du Plessis, Rotterdam School of Management, Erasmus University, The Netherlands\*

Andrew T. Stephen, University of Oxford, England

Yakov Bart, Northeastern University, USA

Dilney Goncalves, IE Business School, Spain

A field study and two experiments demonstrate that encouraging consumers to "merely think" about their uncertainty in the trustworthiness of incentivized reviewers can mitigate source-related uncertainty's negative effects on product evaluations. Merely thinking about source-related uncertainty is shown to make review readers unsure about the basis of their uncertainty. Consequently, the impact of uncertainty on evaluations is reduced without uncertainty being resolved. However, elaborating on source-related uncertainty

could also solidify doubts and enhance its adverse effects on judgments. As such, we show that the mere thought effect depends on whether uncertainty is integral (enhance) or incidental (attenuate) to judgment formation.

For more information contact: duplessis@rsm.nl

### ***The Excitement of Rentals***

Li Huang, University of South Carolina, USA\*

Natalie Truong, Nanyang Technological University, Singapore\*

Jennifer Argo, University of Alberta, Canada

How do consumers form their relationships with rented products? Across two studies, we find that renting a product is conceptually similar to a fling and as a result consumers feel more excitement using a rented as compared to an owned product. This effect is attenuated when the number of times a consumer uses the same rental increases.

For more information contact: kaffeel@gmail.com

### ***1,000 ml vs. 1L: The effect of a unit size, unit congruency, and product similarity on perceived volume of bundled products***

Youngsung Kim, Hankuk University of Foreign Studies

Jihye Park, Hankuk University of Foreign Studies\*

The purpose of this study was to examine the effect of a unit size of a core product in the bundle on perceived volume of an additional product and the total volume of a bundle. Results of three experiments revealed that people tended to overestimate the volume of an additional product and the total volume of a bundle, when the unit of a core product was low. The unit effect was strengthened when the units of a core product and an additional product were congruent and when the bundled products are similar. Estimation bias was found in product bundling.

For more information contact: jihyepark@hufs.ac.kr

### ***Does a Happy Mood Always Lead to Decisions based on Feelings?***

Sungjun Park, College of Business, KAIST, Korea

Moon-Yong Kim, College of Business, Hankuk University of Foreign Studies, Korea\*

This research examines a boundary condition for the effects of a happy mood on feeling-based decision making. The results of two experiments show that happy individuals are more likely to choose cognitively versus affectively superior options when a situation is controlled by others (vs. one's self). The mediation analysis confirms that happy individuals are more likely to rely on cognitive, reason-based decision making when others are in control of a situation.

For more information contact: parksj89@business.kaist.edu

***When Beauty Isn't Skin Deep: Cosmetic Contagion and Consumers' Aversion to Ugly Foods***

Lauren Grewal, University of Pittsburgh, USA\*

Jillian Hmurovic, University of Pittsburgh, USA\*

Cait Lambertson, University of Pittsburgh, USA

Rebecca Walker Reczek, Ohio State University, USA

There is currently a large problem of food waste due to throwing away food that is deemed “not pretty enough” for sale. Despite a number of programs trying to combat food waste, thus far, researchers and companies alike are not sure exactly why consumers find non-aesthetically pleasing foods so aversive. Across a couple of studies thus far, this research demonstrates that consumers have a systematic preference for more versus less aesthetically pleasing versions of the same food due to a form transference of the food's features to the consumer through a process we term “cosmetic contagion”.

For more information contact: [laurengrewal@gmail.com](mailto:laurengrewal@gmail.com)



# Friday, 26 February 2016

## Registration

7:00 am - 8:00 pm

Grand Palm Col. West

## Breakfast

7:30 am - 8:15 am

Grand Palm Col. West

## Session 1

8:15 am - 9:30 am

### ***Symposium: Beyond Personal Consumption: How Consumers Choose for Joint Consumption and Other's Consumption***

**Chair:** Yanping Tu, University of Florida, USA

#### ***Choosing Variety for Joint-Consumption in Committed Relationships***

Jordan Etkin, Duke University, USA\*

Variety plays a key role in choice. People are attracted to varied product assortments (Broniarczyk et al. 1998; Hoch et al. 1999; Iyengar and Lepper 2000; Rolls et al. 1981) and choose varied consumption experiences even when it means selecting less preferred items (Ariely and Levav 2000; Ratner et al. 1999). Decades of research has examined consumers' variety preferences for personal consumption (Ariely and Levav 2000; Berlyne 1970; Kahn and Wansink 2004; Menon and Kahn 1995; Ratner and Kahn 2002; Raju 1980; Simonson 1990).

In addition to choosing more or less variety for personal consumption, however, consumers can also choose more or less variety for joint-consumption with a committed relationship partner. When a person decides what to do with his or her spouse over the weekend, for instance, that person could choose more varied activities to do together (e.g., going out to dinner, to a movie, and to a concert) or less varied activities to do together (e.g., going out to dinner at different restaurants). While prior work provides much insight into factors that drive choice of variety for personal consumption, factors that shape choice of variety for joint-consumption in committed relationships have yet to be explored. What might affect how much variety consumers prefer?

I propose that whether consumers choose more or less variety for joint-consumption in committed relationships depends on their relationship time perspective - the perceived future time ahead in the relationship.

Research on aging and longevity (Carstensen 1992, 2006; Carstensen et al. 1999; Mogilner, Kamvar, and Aaker 2011; Sinha and Wang 2013; Williams and Drolet 2005) posits that consumers monitor the passage of time, paying particular attention to time remaining ahead in the future (Medina 1996; Suddendorf and Corballis 1997). Consumers may perceive more future time ahead in their life (i.e., a longer future time horizon) or they may perceive less future time ahead in their life (i.e., a shorter future time horizon), and this impacts the emotions that they value. In particular, prior research shows that excitement, an emotion associated with the anticipation of future events (Kamvar and Harris 2009), is linked to happiness when individuals perceive a longer future time horizon, but not when they perceive a

shorter future time horizon (Mogilner et al. 2012, 2011). Thus, when consumers perceive more (vs. less) future time ahead in life, they value excitement, and desire exciting experiences, to a greater extent (Carstensen 1992, 2006; Carstensen et al. 1999; Fung et al. 1999; Mogilner et al. 2012; 2011).

Similar to the life course of an individual person, I suggest that committed relationships follow a “life course,” characterized by a beginning and an end (e.g., the death of one or both partners). Thus just as an individual may perceive more or less future time ahead in his own life, I propose that consumers may perceive more or less future time ahead in a committed relationship.

Consumers’ “relationship time perspective” should influence the value of excitement in the relationship, and thus how much variety is preferred for joint-consumption. When consumers perceive more future time ahead in a committed relationship, they should value excitement in the relationship to a greater extent. Because incorporating more variety into what consumers do with a relationship partner should make the relationship feel more exciting (Berlyne 1970; Faison 1977; Kahn 1995; Raju 1980; Menon and Kahn 1995; Venkatesan 1973), I predict that perceiving more (vs. less) future time ahead in a committed relationship will increase how much variety consumers choose for joint-consumption with their partner.

Four experiments test these predictions. All experiments utilize participants in committed relationships (either romantic relationships or friendships) and manipulate perceived future time ahead in the relationship. Experiment 1 examined choice of activities (e.g., make a dinner, watch a movie at home, take a walk). Participants were randomly assigned to make choices for joint-consumption with their romantic relationship partner, or for themselves, and we manipulated how much time they perceived ahead in their romantic relationship. Results supported my predictions. In the joint-consumption condition, perceiving more future time ahead increased the variety of activities chosen ( $F(1, 188) = 4.08, p < .05$ ). There was no such effect, however, on choice of variety for solo consumption ( $F < 1$ ).

Experiment 2 examined restaurant choices and demonstrated the underlying process. Similar to experiment 1, participants were randomly assigned to make choices for joint-consumption with a friend, or for themselves, and we manipulated how much time they perceived ahead in their romantic relationship. Consistent with experiment 1, in the joint-consumption condition, perceiving more future time ahead increased choice of variety in restaurants ( $\chi^2 = 6.53, p < .05$ ), driven by a greater value for excitement in the relationship ( $ab = -.31, 95\% \text{ CI } [-.66 \text{ to } -.10]$ ). There was no such effect, however, for solo consumption ( $\chi^2 < 1$ ), because the value of excitement in participants’ friendship is not what drives choice in this case ( $ab = -.04, 95\% \text{ CI } [-.31 \text{ to } .13]$ ).

Building on these findings, experiments 3 and 4 further explore the underlying process by manipulating the excitement afforded by joint-consumption choice options (experiment 3) and how exciting the relationship feels prior to choice (experiment 4). Experiment 3 examined movie choices. Results showed that perceiving more future time ahead in the relationship increased the variety of movies chosen for joint-consumption ( $\chi^2 = 4.29, p < .05$ ), but when the movies themselves were exciting, this effect was attenuated ( $\chi^2 < 1$ ). Experiment 4 examined dinner recipe choices. Consistent with experiment 3, results showed that perceiving more future time ahead in the relationship increased the variety of recipes chosen for joint-consumption ( $\chi^2 = 7.18, p < .01$ ), but when the relationship was independently made to feel exciting prior to choice, this effect was attenuated ( $\chi^2 < 1$ ).

Together, the studies demonstrate that aspects of consumers’ committed relationships play an important role in their variety-seeking behavior. The perceived future time ahead of a committed relationship determines whether people prefer more or less variety for joint-consumption with their partner.

For more information contact: [jordan.etkin@duke.edu](mailto:jordan.etkin@duke.edu)

## *The Friendly Taking Effect: How Interpersonal Closeness Leads to Seemingly Selfish Yet Jointly Maximizing Choice*

Yanping Tu, University of Florida, USA\*

Alex Shaw, University of Chicago, USA

Ayelet Fishbach, University of Chicago, USA

Consumers frequently choose consumption packages for the self and other together, jointly considering the benefits for both. For example, they choose snacks and movie to consume with friends. Consumption packages are not created equal—some provide greater self-benefit and some provide greater other-benefit. In addition, consumption packages vary by the total benefits they offer. In this research, we study consumers choosing between a consumption package that offers significantly more self-benefit (and thus greater total-benefit) (e.g., 50-minute/30-minute massage for self /other) and a consumption package that offers slightly more other-benefit (e.g., 30-minute/40-minute massage for self/other), and explore the impact of interpersonal closeness on choice for the self-benefiting package.

On the one hand, closeness may reduce choice of the self-benefiting package because people care more about a close other's benefit (Batson 1991; Clark 1983). On the other hand, interpersonal closeness may increase choice of the self-benefiting package in our paradigm because the self-benefiting option maximizes joint benefit. Because cognitively closeness is characterized a highlighted sense of self-other collective (Aron et al. 1991), as evidenced by research on self-other merging (Batson et al. 1997), cognitive interdependence (Kelley and Thibaut 1978), and oneness (Cialdini et al. 1997), we argue that closeness may lead the concern for joint benefit to override the concern for either self-benefit or other-benefit. We explore this possibility and dub the effect “the friendly taking effect” because the intention behind the taking is friendly (i.e., concern for the total-benefit; we-oriented) rather than selfish (i.e., concern for the self benefit; I-oriented).

Six studies support our theorizing using different manipulations of interpersonal closeness. In Study 1, participants chose between two chocolate sampling packages for themselves and another person—“A. 7 chocolates for self + 3 chocolates for other” versus “B. 2 chocolates for self + 4 chocolates for other.” Participants in the close (vs. distant) condition were more likely to choose package A (63% vs. 35%;  $\chi^2(1) = 4.60, p = .032$ ), although they learned they could not redistribute their chocolates.

Study 2 ruled out future reciprocity as an alternative by making the “other person” anonymous with whom participants would not interact in the future. Specifically, we first manipulated closeness by having participants chat with an anonymous other online, following the procedure of the Relationship Closeness Induction Task (Sedikides et al. 1999). We then had participants and the anonymous other rank preferences for five gift items (1<sup>st</sup> is best), and asked participants to choose between two gift packages—“A. 1st favorite for self + 3rd favorite for other” versus “B. 4th favorite for self + 2nd favorite for other.” Again, more people chose package A in the close (vs. distant) condition (77% vs. 55%,  $\chi^2(1) = 4.57, p = .030$ ).

Study 3 replicated the friendly taking effect in the context of 1) selecting airlines to earn award miles and 2) selecting cab routes to save time, even without explicit mention of the total benefit information.

Study 4 ruled out the alternative explanations that people are more selfish towards, and anticipate more forgiveness from a closer other. In the context of receiving referral program gifts, we had participants choose between two gift delivery time options, and manipulated whether the beneficiary in the overall sooner delivery package is self or other—“A. gift for self (vs. other) is delivered in 3 days; gift for other (vs. self) is delivered in 50 days” versus “B. gift for self (vs. other) is delivered in 50 days; gift for other (vs. self) is delivered in 13 days”. Participants chose the overall sooner delivery package (A) more often in the close (vs. distant) condition, regardless of whether

it's more beneficial for self (i.e., friendly taking; 80% vs. 38%,  $\chi^2(1) = 9.08, p = .003$ ) or other (i.e., friendly giving; 92% vs. 73%,  $\chi^2(1) = 3.36, p = .067$ ).

Study 5 provided information processing evidence for the proposed mechanism (i.e., greater concern for the total-benefit in closer relationship), in the context of choosing between two massage packages. In study 4a, we told participants that, to make a decision, they can only view one of the three types of information: time for self, time for other, and total time. We found more participants acquired information on total time in the close (vs. distant) condition (62% vs. 42%;  $\chi^2(2) = 4.55, p = .033$ ). In study 4b, we presented participants with total time and asked participants whether they would like to pay to view the specific allocation before making the choice. We found less participants acquired information on “who-gets-what” in the close (vs. distant) condition (12% vs. 31%;  $\chi^2(1) = 5.92, p = .015$ ). In study 4c, we revealed all the information to participants, asked them to make a choice, and a few minutes later, had them recall “total time” in the option of their choice. We found smaller memory errors for total time in the close (vs. distant) condition (5.00 min vs. 10.75 min,  $F(1, 130) = 5.47, p = .021$ ), suggesting greater attention to joint benefit.

Study 6 provided mediation evidence for the proposed mechanism, as well as directly measuring “taking” by having participants start with a hypothetical massage package that gives them 0 minutes and gives the other 10 minutes. We asked participants to decide how many minutes to take from the other person, under the rule that each minute they take from the other person will be converted into 3 minutes for themselves. Participants took more minutes from a closer other (3.02 vs. 2.10,  $t(112) = 2.40, p = .018$ ), and their rated importance of maximizing total time (4.66 vs. 3.60,  $t(112) = 2.90, p = .004$ ) and mediated the effect of closeness on taking.

Relationship involves give and take. People give more to closer others, partly because giving to a close other feels like giving to the self-other collective. We show that, interestingly, for exactly the same reason, relationship closeness may also lead to more taking, as long as it maximizes joint benefit.

For more information contact: yanping.tu@warrington.ufl.edu

### ***The Interactive Effect of Social Distance and Queue Length on Pay-It-Forward: Role of Felt Responsibility***

Narayan Janakiraman, University of Texas at Arlington, USA

Zhiyong Yang, University of Texas at Arlington, USA

Morgan Ward, Southern Methodist University, USA\*

The phenomenon of paying it forward (PIF), which is understood as a set of behaviors in which individual A extends a kindness to B and subsequently, rather than re-paying a similar gesture back to A, B instead pays it forward to C and C to D and so on, would seem at first blush to be a rare occurrence as it requires the cooperation and generosity of long chains of relative strangers. However, the norm of reciprocity is a powerful influence on behavior and it has been shown that once an individual feels indebted, s/he is strongly motivated to repay the favor to the originator (Cialdini and Goldstein 2004). Thus, it follows that when one receives a kindness, s/he feels inclined to re-pay the favor (even if not directly to the originator of the gift). Much of the extant research on these effects shows that individuals tend to follow a norm of generalized reciprocity which is characterized by the individual (who received the initial benefit or generous act) feels positive affect and subsequently is motivated to pass forward a similar generous deed to an unrelated third party.

In this research we examine how the social context in which the giver chooses to pay forward the act of generosity, affects the likelihood to do so. We suggest that there are important contextual variables that may play a role in the decision to PIF. We suggest that the

likelihood to PIF is a function of both the individuals' identification with the potential recipient, and the number of individuals in the chain that may potentially benefit from the act of generosity.

Prior research examining group identification finds that the size of the group and the degree to which one affiliates with the group identity will greatly influence individuals' behavior towards the members of the group. We suggest that interacting with individuals from a group that one perceives as psychologically close (ingroup), engenders feelings of closeness and responsibility (Brewer and Gardner 1996). Furthermore, as the psychological distance increases, the perceiver is less likely to adopt the individual's perspective, and is more likely to process the information at a higher, abstract construal level (Trope and Liberman 2000). Drawing from the literature on the identifiable victim effect, we suggest that willingness to PIF is similarly affected by how 'identifiable' the recipient of the act is to the giver. Since one's identification with a group positively affects the relatability and individuality of the people within it, we suggest that a recipient who is from an outgroup will be perceived as a non-individualized thereby decreasing his/her likelihood to pay forward a good deed to this person. Likewise, the size of the group is likely to affect how identifiable the recipient is. Specifically, we suggest that people in a large group are less identifiable and thus are less likely to receive a PIF item than those from a small group. Three experiments support our proposed effects.

Study 1 featured a 2 (social distance: close-other vs. distant-other)  $\times$  2 (queue length: short vs. long) between-subjects design. Participants were first instructed to imagine waiting in a queue at a coffee shop for a beverage during a sports event. Social distance was manipulated through school affiliation: in the close [distant] other conditions, others in the line were from the same university [opposing] team as the participant. Queue length was manipulated by visually depicting the participant in a queue with 15 [1] person behind him. After reading the scenario, participants rated their likelihood to PIF to the person behind them. The data revealed a significant interaction ( $F(1,130)=6.01, p<.01$ ). Participants in close-other conditions were equally likely to PIF ( $M_{\text{Short}}=73.25\%$  vs.  $M_{\text{Long}}=68.21\%$ ,  $F(1,130)=.48, p>.45$ ) while those in distant-other conditions were less likely to PIF when the queue was long ( $M_{\text{Short}}=76.00\%$  vs.  $M_{\text{Long}}=58.71\%$ ,  $F(1,130)=12.35, p<.01$ ).

In study 2, we ruled out the rivalry between the opposing teams as an alternative explanation of our findings and feelings of responsibility as the key mediator. The study design was similar to study 1 except that social distance was primed by having participants write about 10 similarities [dissimilarities] between themselves and others at the coffee shop. After the PIF choice, participants reported the degree to which they felt responsible for keeping the chain going. We found a significant interaction ( $F(1,128)=7.25, p<.01$ ) such that individuals primed with similarity were equally likely to PIF ( $M_{\text{Short}}=72\%$  vs.  $M_{\text{Long}}=67\%$ ,  $F(1,128)=.49, p>.45$ ). However, those primed with dissimilarity were less likely to PIF when the queue was long ( $M_{\text{Short}}=71\%$  vs.  $M_{\text{Long}}=44\%$ ,  $F(1,128)=15.1, p<.01$ ). Mediation analysis showed that the extent to which individuals felt they were responsible to keep the chain going mediated the interaction of queue length and similarity on PIF.

Similar to study 2, in study 3 we examined how likely individuals were to PIF easy tasks depending on similarity/dissimilarity to others and number of people behind them. Participants were told that they had to divide 4 tasks between themselves and a future participant: they could complete two word-association tasks (easy) or two vowel-counting (difficult) tasks, or one of each. They were told that the person before them had chosen to pass two easy tasks onto them and that they would need to complete in addition to the ones they were left with. The DV was whether they chose to pass forward both the easy tasks or not. In the high [low] similarity condition, the participants rated two products—Apple and Samsung smartphones—on ten attributes. Then were told that the person who was completing the study next strongly [weakly] matched or 75% [25%] in their responses to the attribute questions and hence were very similar [dissimilar] to them. In the short [long] queue condition, the participants were told that their actions would affect two [ten] people behind them. Consistent with earlier studies, ( $\chi^2(1,128)=3.79, p<.05$ ), individuals who had been primed with similarity showing equal

proportion of passing forward under short (34%) and long (32%) queues; while those primed with dissimilarity were less likely to pass forward under long (7%) than under short (29%) queue.

For more information contact: mkward@mail.smu.edu

### ***Overly Specific Gift Giving: Givers Choose Personalized But Less-Versatile and Less-Preferred Gifts***

Mary Steffel, Northeastern University, USA\*

Elanor Williams, University of California San Diego, USA

Robyn LeBoeuf, Washington University, USA

Givers frequently tailor gifts to recipients, as it is not just the act of giving a gift, but the meaning of that gift, that matters (Belk 1996; Schwartz 1967). Yet the tendency for givers to tailor gifts to recipients may, paradoxically, lead them to choose gifts that are not what recipients prefer to receive. When selecting and tailoring gifts, givers may focus on recipients' enduring, distinctive traits to select what seem like appropriate gifts, but recipients may be more aware that what they want depends on the situation and frequently changes (e.g., Jones and Nisbett 1971; Nisbett et al. 1973). Consequently, givers may gravitate toward gifts that are tailored to recipients' traits but are too specific to meet recipients' varying wants and needs.

Studies 1a, 1b, and 1c examine whether givers tend to choose gifts that are more specific than recipients prefer to receive. In study 1a, participants imagined either giving or receiving a gift card and chose between a Visa gift card or a gift card for the recipient's favorite store. Recipients were more likely to want to receive the Visa gift card than givers were to give it ( $\chi^2(1, N = 294) = 44.50, p < .001$ ). Study 1b illustrates the generality of this discrepancy by showing that recipients are more likely than givers to prefer a gift card meant for several stores over one meant for a single store ( $t(115) = -2.36, p = .02, d = .43$ ), a gift card over a gift ( $t(117) = -2.73, p = .007, d = .50$ ), and cash over a gift ( $t(118) = -4.05, p < .001, d = .74$ ). Study 1c shows that this discrepancy extends to tangible gifts as well: recipients preferred a multi-purpose gift over a single-purpose gift more than did givers ( $t(268.28) = -5.08, p < .001, d = .61$ ).

Study 2 investigates whether givers persist in choosing overly specific gifts even when they first consider what they themselves would prefer to receive. Indeed, givers chose overly specific gift cards even when they sequentially assumed the roles of both recipient and giver (paired  $t(341) = 12.66, p < .001, d = .71$ ). Studies 3a and 3b suggest that givers truly have incorrect beliefs about recipients' preferences. Study 3a shows that recipients were more likely to consider a Visa gift card to be more thoughtful (relative to a store gift card) than were givers ( $\chi^2(1, N = 238) = 21.20, p < .001$ ). Additionally, recipients liked the Visa gift card more than givers thought they would ( $t(236) = 4.04, p < .001$ ), and liked the store gift card less than givers thought they would ( $t(213.36) = -2.77, p = .006$ ). Study 3b shows that givers persist in giving overly specific gifts even when the giver's identity will remain unknown to the recipient ( $t(194.98) = 7.15, p < .001, d = 1.00$ ), suggesting that attempts to signal knowledge about the recipient cannot completely explain this discrepancy.

Studies 4a and 4b show that this discrepancy is rooted in the tendency for givers to focus on recipients' enduring traits and for recipients to focus on their own variable wants and needs. In study 4a, givers rated themselves more likely to consider what their friend was like as a person when choosing a gift than recipients were to consider what they were like as a person when suggesting gifts they would want to receive ( $t(169) = 5.58, p < .001, d = .84$ ). And, givers were less likely than recipients to consider the recipient's current wants and needs when choosing gifts ( $t(169) = -2.30, p = .02, d = .35$ ). In study 4b, givers rated themselves more likely to choose a Visa gift card over the store gift card when they first thought about what their recipient *would like* than when they first thought about what their recipient *is like* ( $t(206) = 2.33, p = .02, d = .32$ ).

Studies 5a and 5b show that this giver-recipient discrepancy can contribute to gift non-use. In study 5a, participants recalled a gift card that they gave [received] and indicated how long it took the recipient [them] to redeem it (if at all). Gift cards were coded for specificity based on the number of product categories for which they could be redeemed. Recipients took longer to redeem gift cards (if at all) the more specific they were ( $\beta = -.31, t = -4.08, p < .001$ ), but givers failed to anticipate this ( $\beta = -.13, t = -1.61, p = .11$ ). In study 5b, we analyzed all gifts that were given in 2013 and redeemed via Giftly, a service that allows givers to give gift cards with a suggestion of what to get and where to get it and allows recipients to receive their gifts as a credit to their credit card or PayPal account. Controlling for gift value and method of receipt, recipients took longer to redeem gifts that came with a specific suggestion of an item or place than ones that did not ( $F(1, 9,355) = 75.89, p < .001, \eta_p^2 = .008$ ).

This work contributes to a growing body of research showing that givers often fail to accurately anticipate what recipients would most like. It further suggests that giver-recipient discrepancies in judgment may be one reason why so many gift cards go unredeemed. It also suggests a solution: focusing on what recipients would like may encourage givers to choose gifts that are more likely to be used and appreciated.

For more information contact: m.steffel@neu.edu

## ***Symposium: The Potential Pitfalls of Experiential Consumption***

**Chair:** Jacqueline Rifkin, Duke University, USA

### ***Discretionary Debt: Perceived Time-Sensitivity Predicts Willingness to Borrow for Experiences and Material Goods***

Eesha Sharma, Dartmouth College, USA\*

Stephanie Tully, University of Southern California, USA

Imagine wanting to purchase a stereo system, but not having cash to pay for it. You could borrow, delay the purchase, or fore go the purchase. What would you do? Now, replace the stereo with a similarly-priced concert ticket for a touring band. Would your decision change based on the ease or difficulty of making the same purchase in the future? The current work investigates the perceived time-sensitivity of purchasing opportunities and how this under-examined factor in consumer borrowing can make novel predictions about borrowing decisions for discretionary purchases.

Previous research suggests that physical longevity predicts willingness to borrow (WTB). People prefer borrowing for purchases that last longer in time because they continue receiving benefits from the purchase over the period for which they are paying for it (e.g., Hirst et al., 1994). One fundamental categorization of purchases that is inherently tied to longevity is that of experiences and material goods (Van Boven & Gilovich, 2003). Since experiences are shorter-lived than material goods, the previous research suggests that people should prefer borrowing for material goods (vs. experiences).

In contrast, the current work argues that, on average, people are more willing to borrow for experiences (vs. material goods) despite their greater ephemerality. We uncover a new, systematic difference between experiences and material goods that we suggest influences WTB more strongly than does the purchase's longevity. We argue that opportunities to buy experiences, on average, are perceived as more time-sensitive (relevant for a shorter window of time) than opportunities to buy material goods. As a result, people are more willing to borrow to acquire experiences since it may be more difficult to make the purchase in the future.

In the current work, we also reconcile our predictions with the previous research. In most borrowing situations, time-sensitivity is highly relevant since people typically weigh their WTB against their willingness to delay or forego the purchase. However, we suggest that in contexts in which the borrowing decision does not affect timely acquisition of the purchase (and time-sensitivity is no longer relevant), people will prefer borrowing for material goods over experiences because doing so permits benefit-payment duration matching.

In Study 1, participants imagined buying either a vacation or a new furniture set (a pair used in the previous work). As predicted, participants in the experience condition ( $M = 3.60$ ) were willing to take on more credit card debt than were participants in the material good condition ( $M=2.93$ ),  $F(1, 198)=9.10$ ,  $p=.003$ .

In Study 2, participants thought about an upcoming purchase they planned to make—either an experience or a material good—and indicated their willingness to finance the purchase on a credit card. Participants' WTB was higher when considering an experience ( $M=4.52$ ) as compared to a material good ( $M=3.91$ ),  $F(1, 335)=5.80$ ,  $p=.017$ . This effect was explained by differences in perceived time-sensitivity (95% CI: .17, .63). These results could not be explained by other differences such as expected happiness from the purchase.

Study 3 attempted to further isolate the importance of time-sensitivity from general attractiveness. Participants imagined being on vacation and not having enough money to buy either an experience (a city tour) or a material good (a painting from a local artist). However, we varied whether the artist made their paintings available for purchase online (not time-sensitive) or not (time-sensitive). Participants were more willing to borrow for the experience ( $M=3.99$ ) than for the non-time-sensitive material good ( $M=2.68$ ),  $F(1, 208) = 17.24$ ,  $p<.001$ . However, as predicted, there was no difference in WTB for the experience and the time-sensitive material good ( $M=3.97$ ),  $F(1, 208) < 1$ , NS. This lack of difference in willing to borrow emerged despite the finding that the experience was rated as providing significantly more happiness than the time-sensitive material good,  $p<.05$ .

Next, we aimed to reconcile our results with previous research. We predicted that when time-sensitivity was made irrelevant, people would prefer matching purchases' duration of benefits to their duration of payments, and using debt to fund material goods over experiences. Some participants imagined making only one purchase (either a stereo or music festival tickets) that would need to be financed, whereas other people imagined making both purchases, but that only *one* would be financed (the other would be paid with cash). Since participants in the latter condition could acquire the time-sensitive purchase with cash, we expected the relevance of time-sensitivity to be eliminated and for borrowing preferences to reverse. Indeed, replicating Studies 1-3, participants had a significantly higher WTB when asked to consider financing the experience alone ( $M=3.41$ ) rather than the material good alone ( $M=2.93$ ),  $F(1, 503)=7.35$ ,  $p=.007$ . However, when told that they could purchase the other option with cash, preferences reversed; participants then indicated less WTB for the experience ( $M=2.41$ ) than for the material good ( $M=4.76$ ),  $t(244)=12.07$ ,  $p<.001$ .

We have suggested that the reversal found in Study 4 was due to the relevance of time-sensitivity in the purchasing context. However, two alternative possibilities are that (1) the longevity component is less evaluable in the absence of a second, reference purchase (e.g., Hsee 1996) and (2) when both material goods and experiences are together, people may feel they *ought* to borrow for the former even though they may *want* to borrow for the latter (Bazerman et al. 1998). Study 5 examined these alternatives and was identical to Study 4 but for the addition of two new conditions: "Reference purchase conditions", in which participants were told about a previous purchase they made before reading about the focal purchase (i.e., "...A month ago, you purchased [a new stereo / two tickets to an upcoming music festival] for \$400 with some cash you had"). The remaining three conditions were the same as those in Study 4. As in Study 4, WTB was greater for the material good ( $M=4.92$ ) than the experience ( $M=2.50$ ) when cash was also available,  $t(238)=10.60$ ,  $p<.001$ . However, regardless of whether a reference purchase was provided, when cash was not an option, WTB was greater for the experience



versus material good (no reference:  $M_{\text{experience}}=3.33$ ,  $M_{\text{material}}=3.01$ ,  $F(1, 975)=3.26$ ,  $p=.071$ ; with reference:  $M_{\text{experience}}=3.51$ ,  $M_{\text{material}}=2.79$ ,  $F(1, 975)=15.85$ ,  $p<.001$ ).

For more information contact: eesha.sharma@tuck.dartmouth.edu

### ***FOMO: How the Fear of Missing Out Leads to Missing Out***

Jacqueline Rifkin, Duke University, USA\*

Cindy Chan, University of Toronto, Canada

Barbara Kahn, University of Pennsylvania, USA

Fear of Missing Out (FOMO) is defined as “a pervasive apprehension that others might be having rewarding experiences from which one is absent” (Przybylski, Murayama, DeHaan, & Gladwell, 2013). This research explores FOMO’s antecedents and consequences, and how it is distinct from regret (e.g., Gilbert, Morewedge, Risen, & Wilson, 2004; Rosenzweig & Gilovich, 2012) and loss aversion (e.g., Shin & Ariely, 2004). In 4 studies, we establish that seeing social media photos of a missed social-group event triggers a two-pronged “FOMO effect”: a decrease in enjoyment of one’s current experience, and an increase in expected enjoyment of the missed experience.

In Study 1, we asked 198 participants, “What does FOMO mean to you?” and coded their responses. We found that 75% of participants mentioned their social group or friends. Of the participants who mentioned when they experienced FOMO, the majority (54%) reported experiencing FOMO during the missed event, compared to before (22%) or after (30%) the event. Finally, although few participants mentioned social media, subsequent questions revealed that more active social media users experience FOMO more frequently ( $r=.23$ ,  $p=.001$ ), and that FOMO occurs most often in social situations (84.4%), compared to with family members (48.3%), coworkers (53.7%), or in academic settings (57.6%).

Studies 2a and 2b demonstrated the two-pronged “FOMO effect” by examining how social media photos affect enjoyment of current and missed experiences. In Study 2a, participants ( $N=91$ ) imagined they faced a social dilemma: attend a “once-in-a-lifetime” concert with an old friend, or a regularly-scheduled party with their social group. All participants were told that they chose the concert (confirmed by a separate pretest to be the most realistic choice). Participants rated their pre-event expected enjoyment of both the concert and party, and then were randomly assigned to one of four conditions: While at the concert, they saw [did not see] photos of the party on Facebook, and they posted [did not post] their own concert photos. Following the photo manipulations, participants rated their enjoyment of the current event (concert) and their expected enjoyment of the missed event (party); participants also completed the same ratings “the next day.” We analyzed enjoyment ratings in a 2 between (Viewed Photos: see, do not see party photos)  $\times$  2 between (Concert Photos: post, do not post)  $\times$  2 within (Event: concert, party)  $\times$  2 within (Time: before-to-during, during-to-after) mixed ANOVA. Results revealed a significant interaction of Viewed Photos, Event, and Time,  $F=24.90$ ,  $p<.0001$ . Seeing (vs. not seeing) party photos produced the two-pronged “FOMO effect”: decreased current event enjoyment ( $M_{\text{concert, party\_photos}}=-0.40$  vs.  $M_{\text{concert, no\_party\_photos}}=-0.06$ ),  $F=4.09$ ,  $p<.04$ , and increased missed event expected enjoyment ( $M_{\text{party, party\_photos}}=0.31$  vs.  $M_{\text{party, no\_party\_photos}}=-0.41$ ),  $F=18.02$ ,  $p<.0001$ . Notably, the FOMO effect was observed even though participants perceived the concert as more enjoyable than the party ( $M_{\text{concert}}=6.47$  vs.  $M_{\text{party}}=5.25$ ,  $t=7.32$ ,  $p<.0001$ ). Finally, we found that posting one’s own concert photos did not mitigate FOMO, suggesting that FOMO is not driven by the desire to “keep up” with others’ social media activity.

Study 2b replicated Study 2a using a more controlled travel-versus-travel social dilemma: Participants ( $N=137$ ) imagined choosing between a vacation in Hawaii with an old friend, or a regularly-scheduled trip to a beach-house with their social group; all were told that they chose the Hawaii vacation (confirmed by a separate pretest to be the most realistic choice). Then, in a 2 within (Event: Hawaii,

beach-house)  $\times$  2 between (Viewed Photos: see, do not see beach-house photos) design, participants rated their enjoyment of the current event (Hawaii) and their expected enjoyment of the missed event (beach-house) before and after seeing [not seeing] social media photos from the beach-house. We found the hypothesized Viewed Photos  $\times$  Event interaction,  $F = 14.47, p < .001$ , replicating the two-pronged FOMO effect: Seeing (vs. not seeing) beach-house photos decreased participants' current event enjoyment and increased their expected enjoyment of the missed event.

Study 3 adapted the concert-versus-party scenario from Study 2a and included an additional "Viewed Photos" condition (a friend posting conference photos), in order to rule out the alternative explanation that FOMO is caused simply by distraction. Submitting participants' ( $N = 179$ ) over-time enjoyment ratings of the current and missed events to a mixed ANOVA, we again replicated the FOMO effect (Viewed Photos  $\times$  Event interaction,  $F = 6.59, p < .002$ ): Seeing (vs. not seeing) party photos decreased participants' current event enjoyment ( $M_{concert, party\_photos} = -0.49$  vs.  $M_{concert, no\_party\_photos} = -0.12$ ),  $F = 6.96, p < .009$ , and increased their missed event expected enjoyment ( $M_{party, party\_photos} = 0.12$  vs.  $M_{party, no\_party\_photos} = -0.24$ ),  $F = 6.47, p < .02$ . Further, as predicted, seeing conference photos did not elicit FOMO (changes in concert and party enjoyment  $ps > .2$ ), indicating that distraction is not sufficient to produce FOMO. We also measured participants' proclivity to worry about missed events using a trait FOMO scale (Przybylski et al., 2013). A Viewed Photos  $\times$  trait FOMO mixed ANOVA predicting concert enjoyment revealed a significant interaction,  $t = 2.34, p < .03$ , with those higher in trait FOMO experiencing sharper declines in current event enjoyment after viewing photos of the missed social event.

These studies demonstrate that seeing social media photos of a missed social-group event produces the "FOMO effect": decreased enjoyment of the current experience, and increased expected enjoyment of the missed event. FOMO was triggered even when the current event was considered more enjoyable and was experienced with a friend (Studies 2-3); however, FOMO was not triggered when the social media photos were unrelated to the social group (Study 3), nor was it mitigated by posting one's own event photos (Study 2a, 3). Together, these findings highlight the critical role of feeling absent from one's social group in eliciting FOMO. This research contributes to the literature by demonstrating how exposure to photos on social media can affect one's enjoyment of ongoing experiences.

For more information contact: jacqueline.rifkin@duke.edu

### ***Photographic Memory: The Effects of Photo-Taking on Remembering Auditory and Visual Aspects of an Experience***

Gal Zauberman, Yale University, USA

Jackie Silverman, University of Pennsylvania, USA\*

Kristin Diehl, University of Southern California, USA

Alixandra Barasch, University of Pennsylvania, USA

Our experiences—and in particular, our memories of them—play a key role in a wide range of contexts, including the formation of self-identity (Howe & Courage, 1997) and decision-making (Alba & Hutchinson, 1987; Lynch & Srull, 1982). Today, photography is essential to how we document our experiences; just ask the 300 million people who chronicle their lives on Instagram or the 82% of American cell phone users who regularly use their device to take photos. Given its prevalence, it is important to understand how the act of taking pictures itself influences people's memory of their experiences, even *without* revisiting those photos.

Prior work on how photography affects memory of experiences has studied the role photos can play in cueing past memories (Glenberg & Grimes, 1995; Neisser & Libby, 2000; Wade et al., 2002), but this work has focused on the role of revisiting photos after the experience. Only one recent paper (Henkel, 2014) examined the effect of photo-taking itself on memory and showed that being directed to take pictures can impair visual recognition of objects. However, by instructing people when to take photos, this paper was unable to

examine how freely deciding when and what to photograph affects memory. This autonomy is integral to photo-taking and may be crucial in examining its effect on memory. On one hand, taking photos may cause people to remember more from their experiences. Photo-taking has been shown to make people more engaged in their experience (Barasch, Diehl, & Zauberan, 2015), which could cause people to remember more details. On the other hand, taking photos may lead people to remember less about their experiences; the photographer may pass off the responsibility of remembering the details to the photos, much like people can shift their memory of information to computers when they expect to access it later (Sparrow, Liu, & Wegner, 2011). Additionally, retaining other aspects of the experience (e.g., auditory information) may be particularly important as that information is not documented by photo-taking. Recall of auditory and visual memories occur along the same neural pathway, which could lead to auditory and visual memory being affected by photo-taking in the same way (Buckner et al., 1996). However, photo-taking may focus photographers more on the visual aspects of an experience to the detriment of other aspects.

In four studies we examined the effect of photo-taking on memory for visual and auditory details in experiences. We found that photo-takers consistently remembered visual information better but auditory information worse.

In studies 1 through 3, lab participants used a unique computer interface that allowed them to “experience” an event by watching a first-hand video and taking pictures by clicking a button. This procedure provided consistency across experiences in each condition, thus ensuring high internal validity.

In study 1, we examined how taking photos affects visual memory. 251 MTurk participants took photos during, or simply experienced, a bus tour of London. This video contained only instrumental background music without any auditory information in order to eliminate any chance for auditory cues to influence participants’ photo-taking behavior or their memory. After watching the bus tour, participants answered 11 visual recognition questions.

We found that taking photos affects memory for visual information; in a two-way ANOVA, participants in the camera condition remembered more of what they had seen ( $M=58.1\%$ ,  $SD=20.3$ ) compared to participants in the control condition ( $M=52.8\%$ ,  $SD=19.7$ ,  $F(1, 249)=4.46$ ,  $p=.036$ ).

In study 2, we shifted our focus from visual to auditory information. 171 lab participants were randomly assigned to take pictures during, or simply experience, the Hershey Park factory tour ride. Afterwards, participants answered 10 auditory recognition questions.

Contrary to our findings for memory of visual information, a two-way ANOVA revealed that participants who took pictures remembered less ( $M=51.5\%$ ,  $SD=26.2$ ) than participants who were not given a camera ( $M=58.6\%$ ,  $SD=26.1$ ,  $F(1,169)=6.27$ ,  $p=.013$ ).

In study 3 we examined the effect of photo-taking on both visual and auditory memory simultaneously, as would be expected in a real life experience. 306 MTurk participants were randomly assigned to take pictures, or simply experience, three narrated tours of three different art galleries. Participants then answered 7 visual and 8 auditory recognition questions about the experience.

In a mixed ANOVA, there was a main effect of type of question ( $F(1,63)=114.44$ ,  $p<.001$ ), such that participants remembered more visual than auditory information. There was also a significant interaction between type of question and condition ( $F(1,304)=461.28$ ,  $p<.001$ ). While participants in the camera condition remembered significantly more visual information ( $M=87.2\%$ ,  $SD=18.5$ ) than participants in the control condition ( $M=76.3\%$ ,  $SD=23.3$ ,  $F(1,304)=20.46$ ,  $p<.001$ ), participants in the camera condition remembered significantly less auditory information ( $M=43.9\%$ ,  $SD=21.7$ ) than those in the control condition ( $M=56.0\%$ ,  $SD=21.3$ ,  $F(1,304)=24.54$ ,  $p<.001$ ).

To assess the external validity of our lab findings, we conducted a field study in a museum exhibit. 203 participants were given a map and audio guide and were randomly assigned to take photos as they wished, or simply experience, a self-guided tour of an exhibit. Afterwards, they answered 9 visual and 9 auditory recognition questions (Time 1). A week later, 142 participants answered 7 visual and 5 auditory recognition (Time 2).

In a three-way mixed ANOVA, there is a main effect of time ( $F(1,200)=60.63, p<.001$ ) as well as type of question ( $F(1,200)=37.78, p<.001$ ), such that participants remember more visual information and in Time 1. Replicating the previous studies, there was a two-way interaction between condition and type of question ( $F(1,200)=11.33, p<.001$ ); participants in the camera condition remembered more visual information than participants in the control condition ( $M_{\text{camera}}=72.5\%, SD=1.4; M_{\text{control}}=68.2\%, SD=1.7$ ) but less auditory information ( $M_{\text{camera}}=59.4\%, SD=1.6; M_{\text{control}}=64.4\%, SD=1.8$ ). There was also a two-way interaction between time and type of question ( $F(1,200)=7.64, p=.006$ ); participants remember less at Time 2, but the decrease is significantly larger for auditory memory ( $M_{\text{time 1}}=68.7\%, SD=1.4; M_{\text{time 2}}=55.1\%, SD=1.9$ ) than for visual memory ( $M_{\text{time 1}}=73.5\%, SD=1.2; M_{\text{time 2}}=67.3\%, SD=1.7$ ).

Overall, we find that photo-taking improves visual recognition but hinders auditory recognition. These results hold when participants' auditory and visual memory are tested individually or simultaneously, and in an externally valid field study.

For more information contact: [jasilv@wharton.upenn.edu](mailto:jasilv@wharton.upenn.edu)

## ***Symposium: A Left-leaning, Per Gram, Positively Natural, and Expensive Recipe for Healthiness: What on Earth Makes Us Think Food is Healthy?***

**Chair:** Kevin L. Sample, University of Georgia, USA

### ***A Left-Side Bias? The Influence of Nutrition Label Display Position on Product Evaluation***

Marisabel Romero, University of South Florida, USA\*

Dipayan Biswas, University of South Florida, USA

Due to regulations, products sold worldwide are often required to have nutritional labels. However, companies have considerable flexibility regarding where to place these labels on packages. In this research, we examine whether the lateral (left vs. right) position of a nutrition label on a package influences product perceptions.

Studies in numerical cognition have documented that consumers make numerical judgments quicker and more accurately when the stimuli is displayed congruently (versus incongruently) with the spatial mental organization of numbers (Proctor & Cho, 2006). Also, magnitude comparisons of numbers are facilitated when large (small) numbers are placed on the horizontal right (left).

Given that the horizontal left (right) side of space is associated with small (large) numbers, we expect that consumers will apply this mental-schema to evaluate caloric information. Hence, when calorie information is presented on the left side of the package (vs. right), consumers will associate the caloric information with smaller magnitude and therefore deem it less harmful to nutritional valuations of the product. We tested our hypothesis across a series of studies.

Study 1a used a 3 (placement of nutritional label on package: left vs. right vs. control condition of center) X 2 (healthfulness of product: healthy vs. unhealthy) between-subjects experiment. We examined the moderating effects of healthfulness of the product since the halo

effect that healthy products typically carry (Chandon & Wansink, 2007) can potentially attenuate the influence of nutritional label placement position on evaluations. The nutritional information of a frozen yogurt product was placed on the left, center, or right side of the product packaging. To manipulate healthfulness of the products, we equaled the caloric information to the amount in a low-fat frozen yogurt bar or in an ice cream bar. The key dependent variables were nutritional attitude towards the product (Kozup, Creyer, & Burton, 2003) and attitude towards the brand.

The results revealed a significant 3X2 interaction effect ( $F(2, 266) = 3.28, p < .05$ ) on nutritional attitude. In order to explore this interaction further, we followed Hayes & Preacher (2013) suggestions on how to treat multicategorical independent variables. We compared the nutritional attitudes towards the product when the nutritional information was placed on the left versus the right of the package. For the unhealthy product, placing the nutritional information on the left (vs. right) led to higher nutritional attitudes ( $M_{\text{left}} = 3.54$  vs.  $M_{\text{right}} = 3.06; p < .05$ ). For the healthy product, placement of the nutritional information on the left (vs. right) also led to higher nutritional attitudes towards the product ( $M_{\text{left}} = 4.39$  vs.  $M_{\text{right}} = 3.95; p = .05$ ). Furthermore, for unhealthy products, the left (vs. center) condition led to higher nutritional evaluations of the product ( $M_{\text{left}} = 3.67$  vs.  $M_{\text{center}} = 2.84, p < 0.01$ ). However, for the healthy product, there was no significant difference between the two conditions ( $p = .37$ ). The results were replicated for attitude towards the brand.

In Study 1B, we replicated our effects by using a real product package of a wafer cookie product with the nutrition label seamlessly pasted on the back of the package. As expected, participants held higher nutritional attitudes toward the product when the label was placed on the left ( $M = 3.1$ ) compared to the right ( $M = 2.5, p < .05$ ) or the center ( $M = 2.5, p < .05$ ).

Study 2 found that consumers with low nutritional involvement, who are more likely to minimize the cognitive effort required to analyze nutritional information, are more vulnerable to the placement of calorie information than those consumers with high nutritional involvement (H2). We manipulated calorie placement in the front façade of a lab-created version of a granola product package and then measured nutritional involvement. An ANCOVA revealed a significant interaction effect between nutrition information position and nutrition involvement on nutrition evaluation ( $F(1,83) = 5.760; p < .05$ ). As expected, participants low on nutritional involvement (- 1 SD) evaluated the product higher on nutrition when the information was on the left (vs. right) ( $M_{\text{left}} = 5.11$  vs.  $M_{\text{right}} = 4.48; p < .05$ ). However, the effect was attenuated for participants with high nutritional involvement ( $p = .17$ ).

Study 3 explored some of the process differences that occur when nutritional information is placed on the left versus right side of a product package. Also, to examine experimental robustness, we provided a broad health claim of “low-fat”, which was placed on the left (vs. right) of an unhealthy (vs. healthy) package. We expect, that low-fat claims will be evaluated as more credible when placed on the left because this side of space is associated with small/low numerical quantities. We analyzed thought protocols by counting the number of thoughts related to health benefits.

A 2 (left vs. right) x 2 (healthy versus unhealthy) ANOVA on the number of health benefits mentioned in the thought protocol revealed significant interaction effects ( $F(1,125) = 4.07, p < .05$ ). Specifically, for unhealthy products, a low-fat claim on the left (vs. right) of the product led to higher number of health benefits ( $M_{\text{left}} = .33$  vs.  $M_{\text{right}} = .06, p = .06$ ). The same pattern was found for credibility of the claim; for unhealthy products, placing the claim on the left (vs. right) was evaluated as being marginally more believable ( $M_{\text{left}} = 4.12$  vs.  $M_{\text{right}} = 3.45, p = .09$ ). Consistent with a health halo explanation, we did not find an increase in health positive thoughts or credibility of the claim between conditions when the product was healthy. Finally, the number of health benefit thoughts about the product mediated the effect of nutritional information placement on belief (95% CI =  $-.72, -.06$ ).

Across four studies, we provide evidence that the placement of a nutritional label on the left (vs. right) of a product package results in higher nutritional valuations of the product. From a practical perspective, it can help regulators/managers decide optimal positions for

placing nutritional information on product packages. Moreover, given widespread concerns about high obesity rates, studying factors that can lead to more accurate assessment of nutritional labels/information is important.

For more information contact: romerom@usf.edu

### ***Introducing the “Calories per Gram Ratio” Label to Promote Healthy Food Choices***

Julio Sevilla, University of Georgia, USA\*

Brian Wansink, Cornell University, USA

Past research has shown that consumers tend to make unhealthy food choices even when they attend to caloric information and intend to make healthy decisions (e.g. Balasubramanian & Cole 2002). One of the factors responsible for such problem may be manufacturers' lenient following of the regulations provided by the Nutritional Label and Education Act (NLEA) of 1990, which establishes the portion size that constitutes one serving of food. Despite this regulation, manufacturers regularly report smaller serving sizes than established by the NLEA, often with the intention to lead consumers to believe their products have fewer calories and are healthier than they actually are (Mohr, Lichtenstein & Janiszewski 2011). Given eating restrained consumers' (Herman & Polivy 1980) tendency to look for licenses to indulge (e.g. Fitzsimons, Nunes & Williams 2007; Wilcox et al. 2009), it is not surprising that they tend to interpret the ambiguity of such caloric information in a way that allows them to maximize consumption (e.g. Aydinoglu & Krishna 2011). Furthermore, serving size issue aside, consumers often overvalue the importance of consuming a product containing an absolute lower number of calories (e.g. a small donut vs. a large bagel) to the detriment of attending to other important food attributes such as caloric density (e.g. Wansink 2004), that is, the relationship between the size of a food item and the absolute number of calories it contains. Caloric density has been shown to be an important predictor of caloric consumption (Rolls et al. 2004), as people become more full by the weight of a food than by the amount of calories it contains (Rolls, Bell & Waugh 2000; Rolls et al. 1998; Rolls, Morris & Roe 2002). Thus, this suggests that consuming foods that are high on caloric density often results in an overall higher amount of calories ingested.

These past findings suggest that consumers may benefit from cues or instruments that hint them towards consuming foods that have a lower calories per gram ratio or a lower caloric density, even if they contain a larger amount of calories due to their higher volume (e.g. a large bagel vs. a small donut), since these will be more filling and will likely decrease subsequent consumption. The current work aims to introduce and test the effectiveness of one such tool: the “Calories per gram ratio” label. By introducing this instrument, we aim to teach consumers to make more informed and healthier food choices that will lead them to reduce their total caloric intake. We argue that this metric achieves this objective by allowing consumers to easily compare the caloric density across different types of foods that may vary on their weight and absolute number of calories.

In four studies we show that the use of the Calories per gram ratio label leads consumers to reverse their choices in favor of healthier options that have a lower caloric density (fewer calories per gram) even in cases when these have an absolute higher number of calories. Study 1 (N=288) showed initial evidence in favor of the effectiveness of the label in a design where participants selected a bagel or a donut. In this study the bagel had a higher number of calories than the donut but a lower calories per gram ratio. We obtained that when participants only had access to the traditional nutritional information they were more likely to pick the donut ( $M_{\text{donut}}=52.8\%$ ) and believed this item was healthier ( $M_{\text{donut}}=53.5\%$ ). However, this pattern reversed in the presence of the label, as people were more likely to pick the bagel ( $M_{\text{bagel}}=61.8\%$ ;  $z = 2.49$ ,  $p = .01$ ) and believed it was healthier ( $M_{\text{bagel}}=62.5\%$ ;  $z = 2.72$ ,  $p < .01$ ). This suggests that using the label nudges consumers towards making healthier choices and helps them realize which item is healthier even if it has an absolute higher number of calories.

Study 2 (N=160) used a similar paradigm and replicated the effect with the use of packaged products: granola bars and chocolates. As expected, we obtained that the healthier item, the granola bar, was more likely to be chosen ( $M=65.5\%$  vs.  $M=34.2\%$ ;  $z=3.95$ ,  $p<.0001$ ) and was perceived to be healthier ( $M=90.5\%$  vs.  $68.4\%$ ;  $z=3.48$ ,  $p<.001$ ) when presented with the calories per gram ratio than when only featured with the traditional nutrition information. Furthermore, we showed that the effect of the label on choice was mediated by healthiness perceptions associated to the products [LLCI: .11 to ULCI: .82].

Study 3 (N=274) showed that merely featuring the label can improve a manufacturer's choice share and healthiness perceptions. Specifically, in this design we compared two potato chips products that had the same nutritional information: Cape Cod and Kettle. We showed that while Cape Cod was more likely to be chosen and was perceived as healthier when only calories and grams ( $M_{\text{Cape-Cod}}=63.0\%$  vs.  $M_{\text{Kettle}}=37.0\%$ ;  $z=3.54$ ,  $p<.005$ ) or only calories were presented ( $M_{\text{Cape-Cod}}=64.8\%$  vs.  $M_{\text{Kettle}}=35.2\%$ ;  $z=4.00$ ,  $p<.05$ ), this effect was neutralized in the presence of the label, as in these cases Kettle was perceived to be similar to Cape Cod in terms of choice share ( $M_{\text{Kettle}}=47.3\%$  vs.  $M_{\text{Cape-Cod}}=52.7\%$ ;  $z=.74$ ,  $p=.46$ ) and perceived healthiness ( $M_{\text{Kettle}}=54.9\%$  vs.  $M_{\text{Cape-Cod}}=45.1\%$ ;  $z=1.33$ ,  $p=.18$ ).

While the initial studies showed the effect in a computer-based setting, study 4 (N=162) replicated the findings in a set-up where consumers had to make a real consumption choice between a bagel and a donut. Furthermore, this study confirmed our prediction that picking healthier items that have an absolute higher number of calories but a lower calories per gram ratio due to the presence of the Calories per gram ratio label leads consumers to ingest fewer calories in subsequent consumption opportunities. Besides replicating the same effect as in past studies, we also demonstrated that those that picked and consumed the bagel against the donut subsequently ate less granola trail mix when invited to consume such item freely.

For more information contact: [sevilla@uga.edu](mailto:sevilla@uga.edu)

### ***You Call This Healthy? Refining “Healthy Food” Claims and Their Associations***

Quentin Andre, INSEAD, France\*

Pierre Chandon, INSEAD, France

Kelly L. Haws, Vanderbilt University, USA

Consumers are routinely exposed to a large variety of front-of-package statements meant to communicate in one way or another that the food is healthy. Although it is well-known that consumers are poor at understanding food claims (see Mariotti et al. 2010; Nocella & Kennedy 2012 for a recent review), it may come as a surprise that business practitioners and food researchers still have limited conceptual tools to navigate the diversity and complexity of food claims. Indeed, although research has investigated people's responses to specific food claims (e.g., “low fat”), we do not know whether these reactions can be generalized to other claims. More generally, we do not know whether all food claims meant to communicate health benefits should be lumped together for research or usage, or whether they should be grouped into a meaningful clusters, and if so on what basis. Finally, little is known about how these claims are interpreted differently across cultures with potentially varying perceptions of what it means for a food product to be healthy, as reflected for example in the “French Paradox” (Rozin, 2005; Wansink, Payne & Chandon, 2007).

To address those issues, we develop and test a theory-driven classification of food claims based on customers' perceptions. We first identified two dimensions which have been shown to be of high theoretical and practical relevance in the context of food evaluations and choice. The first dimension, perceived positivity (focusing on the positive or negative aspects of the food), has been shown to play a central role in motivation echoing research on regulatory focus, previous research has demonstrated that people respond differently to a

food claiming the presence of a positively-framed benefit (e.g. promotes energy) than to a food claiming the absence of a negatively-framed benefit (Malaviya & Brendl, 2014). In practice, the distinction between positive and negative nutrients is commonly used by business practitioners (e.g. “Smart Choice” or “NuVal” labeling systems). The second dimension, naturalness, reflects the natural and scientific nature of the food claim. Indeed, concerns for the naturalness of the food are widespread and profound (Rozin et al., 2012), and consumers’ judgments of naturalness depend on the process through which the food has been produced (Evans, de Challemaison & Cox, 2010), and marketers often highlight the natural qualities of their food products, or extol the scientific benefits of their production process.

Next, starting from 108 health claims appearing in the ProductScan database of new products in the U.S., we developed a sample of 37 common and familiar food claims that fit into one of the four identified categories by pretesting these claims ( $n = 432$ ). These 37 claims were then used in study 1, in which 401 Amazon MTurk participants each evaluated 8 food claims randomly chosen from the 37. The assessments included measures of naturalness, positivity, as well as inferences about the healthiness, taste and satiating power of the food, and demographic information.

Results revealed independence between the two factors, providing evidence of the four different types of food claims: “Removing” claims (science-based and negative-focused, e.g., “gluten free”), “adding” claims (science-based and positive-focused, e.g., “added vitamins”), “not removing” claims (nature-based and positive-focused, e.g., “whole grains”) and “not adding” claims (nature-based and negative-focused, e.g., “no artificial flavor”). This four cluster solution best describes the perceptual space of food claims and corresponds to a 2 (nature vs. science based) x 2 (positive vs. negative focus) framework. Further analysis revealed that each type of claim was associated with different taste, health, and satiation expectations. First, positive-focus claims were seen as healthier than negative focus ( $M=5.49$  vs.  $M=5.05$ ,  $F(1,33)=19.67$ ,  $p<.001$ ), and similar differences were observed for the predicted satiation from the food ( $M=4.35$  vs.  $M=3.70$ ,  $F(1,33)=22.32$ ,  $p<.001$ ). The differences were even stronger for predicted taste: “Not Removing” claims were seen as tastier than both “Not Adding” and “Adding”, which were in turn seen as tastier than “Removing”.

In our second study, we collected another sample from U.S. MTurkers ( $n= 1367$ ) as well as a demographically matched sample of French participants through working with a French research company. Both samples were similar in terms of restrained eating and subjective nutrition knowledge, but the American sample was higher in BMI (27.0 vs. 24.7) nutrition consciousness, and objective nutrition knowledge. We chose 16 representative claims from the prior study, with four from each of our previously identified clusters. For this study, to focus participants, all were told that the health claims were on a box of ready-to-eat cereal, a product category with frequent and varied health claims. Each participant evaluated 4 of the 16 claims. The results served to confirm the healthiness framework revealed in study 1, while also highlighting important similarities and differences between the cultures.

For overall evaluation of the cereal, the French preferred those with the nature-based claims over those with the science-based claims, whereas the Americans liked both nature and science-based claims equally. Health claims focusing on positive elements led to better inferences in general (about healthiness, taste, satiation, and overall quality) than health claims focusing on negative elements across both cultures. However, while Americans viewed science-based claims as healthier than nature-based claims, the opposite was true amongst the French participants. Science-based and negative “removing” claims were perceived to be better for dieting and seen as more appropriate for women in both countries. Finally, nature-based claims were linked to better taste and food quality than science-based claims across cultures.

In conclusion, our results provide both food researchers and marketers with a better understanding of the way consumers perceive healthy food claims, and the extent to which functionally similar food claims can lead to strikingly different expectations in terms of taste, healthiness, and other characteristics. Further, our cross cultural study documented both some similarities, but also striking



differences in how health claims were perceived by American and French participants, suggesting that the cultural context is critical in determining which type of claims most effectively communicate a product's healthiness.

For more information contact: [quentin.andre@insead.edu](mailto:quentin.andre@insead.edu)

### ***Healthy Diets and Empty Wallets: The Healthy=Expensive Intuition***

Kelly L. Haws, Vanderbilt University, USA

Rebecca Reczek, Ohio State University, USA

Kevin L. Sample, University of Georgia, USA\*

Is this food healthy? Tasty? Affordable? Satisfying? Consumer decision making regarding foods is a belief-laden, complex, and important issue significantly impacting overall health. Prior research examining consumer lay theories with respect to food consumption has shown this, such as the belief that unhealthy products are tastier (Raghunathan et al. 2006). Clearly, underlying beliefs in the relationships among the various factors driving food choices are critical in understanding food decision making.

Health and financial concerns are two factors subject to consumer beliefs that are often in conflict in consumer decision making, for example when offered super-sized pricing, consumers value finances over health by choosing larger sizes with lower unit-prices (Haws & Winterich 2013). Rehm et al. (2011) and Larson et al. (2009) have provided evidence suggesting that a healthier diet may indeed be more expensive, but Carlson and Frazao (2012) have demonstrated that unhealthier diets can be more expensive depending on how it is assessed. Therefore, an understanding of the beliefs behind these factors of health and cost is crucial in understanding food decision making. We examine beliefs about the relationship between the healthiness and expensiveness of food products at the level of the individual consumer in a series of experimental studies, proposing and demonstrating that consumers incorporate a lay theory that healthier products are more expensive, leading to intuition-based inference making, food choice, and more global evaluations of health claims.

In study 1, 108 MTurk participants were provided with information about the health grade of a granola product, with the grade being either an "A-" or a "C". Following this manipulation, participants were asked to rate how expensive they thought the product would be compared to other similar products on a 7-point scale. As expected, the product rated as healthier was perceived to be more expensive than the less healthy product ( $M_{\text{healthy}} = 5.15$  vs.  $M_{\text{unhealthy}} = 4.51$ ,  $F(1, 106) = 6.29$ ,  $p < .05$ ).

In study 2, we simultaneously examined how information about product price impacted perceptions of healthiness and how information about healthiness impacted perceptions of product price when the actual food product was consumed. After being provided with information about either the price (\$.25 or \$2.00) or healthiness level (independent health grade: A- vs. C), participants were asked to indicate the relative healthiness and expensiveness of the product compared to other similar types of products. We examined the contrast of healthiness perceptions based on the cheap versus expensive manipulation and found that the cheaper product led to lower perceptions of healthiness than did the more expensive product ( $M_{\text{expensive}} = 4.77$  vs.  $M_{\text{cheap}} = 3.83$ ,  $t(137) = 2.97$ ,  $p < .01$ ). Similarly, the less healthy product led to lower perceptions of expensiveness than did the healthier product ( $M_{\text{healthy}} = 4.34$  vs.  $M_{\text{unhealthy}} = 3.51$ ,  $t(137) = 5.64$ ,  $p < .001$ ). The results of this study suggest that the healthy = expensive intuition operates in both directions, that is, when an item is positioned as more expensive, consumers perceive it to be healthier, and when a product is positioned as healthier, consumers perceive it to be more expensive.

In study 3, we presented 38 participants a scenario in which they were in charge of choosing an entrée that would better meet a goal to be healthier. Following a health goal prime, participants were presented with two different chicken/pasta dishes selected to be similar in terms of healthiness, based upon actual nutrition information. We counterbalanced which option was more expensive, using price points of \$15 and \$22, and the order of presentation of the options was randomized for each participant. A chi-square test revealed differences in choice selections consistent with the notion that whichever option was more expensive was selected to be more likely satisfy the healthier goal (Chi-square = 5.16,  $p < .05$ ). Essentially, choice shares between the options reversed such that whichever entrée was listed as the higher price was selected more than twice as often as the other option. Therefore, study 3 provides evidence that beliefs about the link between healthiness and expensiveness impacted choice.

In study 4, the 197 participants were asked to make a series of choices structured as a grocery shopping trip for a family of four. Half of the participants were explicitly told to imagine that they were on a budget. Participants were presented with 26 grocery choices, 13 of which were pairs pretested to differ in healthiness perceptions. An analysis of the number of choices of the less healthy products show that the participants in the budget condition were less likely to choose the healthier products ( $M = 5.69$ ) than those in the control condition ( $M = 7.17$ ;  $F(1, 195) = 14.30$ ,  $p < .001$ ), indicating that when given a goal to conserve money, participants chose less healthy options as a means to do so.

Finally, study 5 examines how beliefs that healthy=expensive impacts broader beliefs about healthiness. Specifically, 115 participants were shown a set of 4 trail mix options in which one mix was labeled as the “Perfect Vision Mix” and said to contain DHA for eye health. Participants either saw a price consistent with the other three options or 20% higher for the focal trail mix. In this case, the dependent measures were perceptions of the importance of DHA and intentions to take actions related to consuming DHA and protecting eye health. All four measures (i.e., “How important is it that a healthy diet include DHA?” 1 = not at all important, 9 = very important) showed that seeing the premium price increased perceptions of the importance of the DHA/eye health claim. For example, those in the higher price condition thought that DHA was a more important part of their diet than did those in the average price condition ( $M_{\text{high}} = 4.93$  vs.  $M_{\text{low}} = 4.11$ ,  $F(1, 114) = 4.89$ ,  $p < .05$ ).

In summary, we have established a basic link demonstrating a consumer lay theory linking healthiness and expensiveness. This intuition led to lay inferences regarding perceptions of health and price, differences in choice patterns, and more general perceptions of the importance of health claims, suggesting significant implications for food decision making.

For more information contact: kls62341@uga.edu

## ***Individual Papers: Measurement***

### ***Revisiting range theory of pricing: Overlapping price ranges***

Saravana Jaikumar, Indian Institute of Management Udaipur\*

Arvind Sahay, Indian Institute of Management Ahmedabad

Rajiv Vaidyanathan, University of Minnesota Duluth, USA

Consumers may rely on few determinant attributes (Alpert, 1971) to evaluate their choices and make purchase decisions. When a consumer focuses on a particular determinant attribute (eg. screen size in the case of television purchase) and considers the set of products meeting specific quality criteria for that attribute (eg. 32” TV), the range effects of price evaluation may be observed. Prior

research on range theory shows that consumers' psychological price evaluation scale depends on the range of prices (most and least extreme prices for the 32" TV) observed (Janiszewski and Lichtenstein, 1999).

In this paper, we study a more realistic situation where a range of prices is observed at each quality level (eg. 32" range, 40" range, etc) with the anchors of one range overlapping with those of another range. For instance, a high end 32" may be priced similar to a low end 40" leading to an overlap in the two price ranges. A consumer has to evaluate a product's price in the presence of two or more price distributions whose anchors overlap. When the lower (upper) anchor of a range overlaps with the upper (lower) anchor of a lower (higher) quality range, we term it as left (right) overlap.

Consider a consumer evaluating a low end (lower end of the price range) 32" television. Exposure to a 24" television available at similar price levels is likely to trigger counterfactual thoughts in consumer's mind. The fact that a low quality (24") is available at the same price may lead to cognitive dissonance and consumer is likely to avoid the region of overlap (left overlap) and consider better models in the 32" range. Similarly, when evaluating a high end 32" television, the consumer may be exposed to a 40" television available at similar price levels. This again may result in counterfactual thoughts that a better quality television (40") is available at the same price and the consumer is likely to avoid the right overlap region of the 32" television. Hence we argue that the psychological price evaluation scale for a particular range of prices (32" TV) is shortened in case there is an overlap with other ranges (24" and 40" TVs).

Three studies were conducted to examine the effect of overlapping price ranges. Study 1 illustrates the effect of overlapping price ranges using a single factor (four levels: left control, left overlap, right control and right overlap) between-subjects design. Subjects were presented with two lists of television prices - 24" and 32" in the left conditions and, 32" and 40" in the right conditions. Across all conditions, the prices of 32" TVs remain the same (ranging from INR18,500 to INR38,800). Subjects in the left (right) control condition are presented with 24" (40") TV prices that do not overlap with the anchors (lowest and highest prices) of 32" TVs. Subjects in the left (right) overlap condition viewed prices of 24" (40") TVs whose upper (lower) anchor overlap with the lower (upper) anchor of the 32" TV range. Price attractiveness ratings were measured at three price levels (INR19,000, INR27,400 and INR35,000) for a newly launched 32" television on a 7-point scale (1-not attractive to 7-very attractive). Further, subjects' evoked price range for the 32" TV was captured on a price line (a line segment where subjects have to mark the lowest and highest prices that they are willing to pay). The results indicate a significant difference in the attractiveness rating of INR19,000 ( $M_{\text{LeftOverlap}}=4.26$ ;  $M_{\text{LeftControl}}=4.64$ ) and INR35,000 ( $M_{\text{RightOverlap}}=2.27$ ;  $M_{\text{RightControl}}=2.64$ ). The price closer to the left (right) anchor is rated significantly lower in the left (right) overlap condition compared to the left (right) control condition. Analysis of the evoked price range revealed a marginally significant difference in the lowest price subjects were willing to pay between the left control and overlap groups ( $M_{\text{LeftControl}}=20,503$ ;  $M_{\text{LeftOverlap}}=21,881$ ). Further, the highest price that subjects were willing to pay was significantly different between the right control and overlap groups ( $M_{\text{RightControl}}=32,033$ ;  $M_{\text{RightOverlap}}=29,216$ ). The results illustrate the shortening of the evaluation scale and evoked price range in the overlap groups.

In study 2, we use 'eye tracking' as a tool to illustrate the extent of counterfactual thought arising due to overlapping ranges. We used two groups (right control and right overlap) and the stimuli were similar to study 1. Pattern of price attractiveness ratings were consistent with those of study 1. Further, fixation times on the 40" lower anchor ( $M_{\text{RightControl}}=1016\text{ms}$ ;  $M_{\text{RightOverlap}}=2408\text{ms}$ ) before rating the prices differed significantly between the two conditions. A similar pattern was observed with revisits (number of visits). Subjects spent more time contemplating the low end of the 40" range in the right overlap condition indicating the importance given to the overlapping anchor.

In study 3, we use a simple between-subjects design (overlap and control). Initially, we capture subjects' preferences for TV attributes (screen size and screen resolution). Subjects are then shown six TV models (three 32", high resolution and three 40", low resolution) and are asked to indicate the purchase likelihood of buying one of the three 32" TVs ( $PL_{\text{Attributes}}$ ). In the next stage, the price information is added to the six models (prices of 40" vary depending on overlap or control groups) and subjects are asked to indicate the purchase

likelihood again ( $PL_{Attributes+Prices}$ ). The dependent measure is the difference in purchase likelihood ( $PL_{Attributes+Prices} - PL_{Attributes}$ ) – the incremental effect of price information. Results of ANCOVA (screen size and screen resolution preferences controlled) indicate a significant difference between the overlap and control groups. Evidently, the pricing structure (overlap vs no-overlap) has a significant influence on purchase likelihood while taking preferences for attributes into account (eliminating asymmetric dominance as an alternative explanation).

In conclusion, this work makes a significant contribution to range theory of pricing by considering multiple price distributions. Our work indicates that price evaluation scale may not be linearly dependent on the price range, but may also depend on anchors of other price ranges.

For more information contact: saravana.jaikumar@iimu.ac.in

### ***The development and measurement of tightwad-spendthrift tendencies in childhood***

Craig Smith, University of Michigan, USA

Margaret Echelbarger, University of Michigan, USA\*

Scott Rick, University of Michigan, USA

Susan Gelman, University of Michigan, USA

How do consumers emotionally respond to the prospect of spending money? A number of studies have argued that some people – “tightwads” – chronically find the prospect of spending money psychologically painful, whereas others – “spendthrifts” – do not find the prospect of spending painful enough (Rick, Cryder, and Loewenstein 2008; cf. Berman et al. 2014; Frederick et al. 2009; Raghurir and Srivastava 2009; Thomas et al. 2011; Rick, Small, and Finkel 2011). The tightwad-spendthrift scale (and construct) is distinct from related individual differences (e.g., frugality, materialism, self-control), has high internal and test-retest reliability, and is predictive of spending and saving behavior (controlling for income; Rick et al. 2008).

An important set of open questions regarding the tightwad-spendthrift construct concerns how it develops in the first place. For example, are parents coaching their children regarding how they should respond to spending opportunities, or are children observing and unconsciously mimicking their parents’ reactions to spending opportunities? And by what age do children develop chronic emotional reactions to the prospect of spending money? Can children report on these tendencies (as adults do when completing the tightwad-spendthrift scale), or are researchers better served by asking parents to report on their children’s emotional reactions toward spending? An understanding of the sources of tightwaddism and spendthriftiness may provide parents with some insights into how to steer their children away from these tendencies (which are common sources of distress among both tightwads and spendthrifts; Rick et al. 2011).

As a first step toward addressing these questions, we developed and validated a tightwad-spendthrift scale for children. The scale was similar in structure to the Berkeley Puppet Interview (e.g., Measelle et al. 1998). That is, rather than ask children to rate their agreement with different items, each of the seven “items” in the child tightwad-spendthrift scale presents two different puppets, each of whom expresses different feelings toward spending money (e.g., one puppet says “Spending money makes me feel bad,” and the other puppet says “Spending money makes me feel good”). Children indicated (sometimes verbally, sometimes by pointing) which puppet’s reaction most closely matches their own typical reaction to spending money. After completing the scale and some filler measures, we gave children \$1 and the opportunity to use it to buy a small bag of toys (41% chose to buy the toys).

We administered the scale to 136 children (ages 5-10; 51% female), who were attending a museum with a parent. Parents remained in the vicinity while their child completed the study, but they did not interact with their child during the study. The scale exhibited good internal consistency (mean inter-item correlation: .23, which is above the recommended .15-.20 threshold for “broad” constructs, Clark and Watson 1995). As in adult samples (Rick et al. 2008), the distribution of child tightwad-spendthrift scores was significantly skewed toward tightwaddism. For example, the lowest two scores (0 and 1 on the 0-7 scale, indicative of tightwaddism) were about 4 times as common as the highest two scores (6 and 7, indicative of spendthriftiness): 29% of the sample vs. 7% of the sample. Also consistent with prior work with adults, child tightwad-spendthrift scores were negatively and significantly correlated with age (older children were more likely to be tightwads), but unrelated to gender. Perhaps most importantly, child tightwad-spendthrift scores significantly predicted their buying decisions at the end of the study, even when controlling for children’s self-reported liking of the toys (ratings that were, themselves, unrelated to child tightwad-spendthrift scores). Taken together, these results suggest that children as young as 5 years old have fairly stable emotional reactions to the prospect of spending money, have some insight into these reactions, and can describe them.

Seventy-five parents completed the (adult) tightwad-spendthrift scale and answered some questions assessing their view of their child’s tendency for tightwaddism (e.g., “My child wants to buy new things for herself, but ends up saving her money instead of spending it”). Parents’ perceptions of their child’s tightwad-spendthrift tendencies correlated significantly with their child’s view of their own tightwad-spendthrift tendencies ( $r = .25$ ). However, parents’ perceptions of their child’s tightwad-spendthrift tendencies did not predict children’s buying decisions. This suggests that assessing children’s feelings toward spending money may best be accomplished by asking the children themselves. In fact, parents largely (and mistakenly) seemed to see themselves in their children: the correlation between parents’ perceptions of their child’s tightwad-spendthrift tendencies and parents’ own tightwad-spendthrift score was .74. By contrast, the correlation between the child’s actual tightwad-spendthrift score (as assessed by the child) and the parent’s tightwad-spendthrift score (as assessed by the parent) was only .05.

We are currently building on these results in an ongoing lab study (to be completed this fall) in which parents are discussing different spending situations with their child (e.g., a child who is out of money wants to buy something and is considering borrowing money from a friend) to examine whether the way in which parents talk about money with their child predicts their child’s tightwad-spendthrift tendencies.

For more information contact: [srick@umich.edu](mailto:srick@umich.edu)

### ***Customer Inspiration: Conceptualization, Scale Development, and Validation***

Tim Boettger, University of St. Gallen, Switzerland\*

Thomas Rudolph, University of St. Gallen, Switzerland

Thilo Pfrang, University of St. Gallen, Switzerland

Heiner Evanschitzky, Aston University, UK

### **Introduction**

Consumers are not only shopping to fulfill utilitarian needs, but also due to hedonic motivations such as the search for new ideas and inspiration (Babin, Darden, and Griffin 1994; Childers et al. 2001; Arnold and Reynolds 2003; Barnes, Beauchamp, and Webster 2010). However, little is known about the state of inspiration in a marketing context. Hence, it is unclear

- (1) How customer inspiration can be conceptualized and measured,
- (2) How it relates to established constructs in consumer psychology,
- (3) How consumers’ levels of inspiration can be influenced, and

(4) Whether inspiration can predict consumption-related outcomes beyond established constructs such as satisfaction and delight. In order to address these research gaps, we propose a conceptualization of customer inspiration, and report four studies involving (1) development of a reliable scale, (2) exploration of its nomological network, (3) experimental manipulations and tests for predictive quality, and (4) a field experiment.

### **Conceptual Background**

Prior research in social psychology suggests that inspiration generally involves an epistemic component and a motivational component, and can occur during mundane activities such as work, sports, and relaxation (Hart 1998; Thrash and Elliot 2003, 2004). Customer inspiration is the state of inspiration as experienced by the customer in a marketing context. Based on theoretical reasoning, we define *customer inspiration* as a customer's state of high motivation to pursue a goal caused by an epistemic event. For example, a consumer might be *inspired by* finding a new recipe (epistemic) and is thus *inspired to* buy one of its ingredients (motivational). Customer inspiration is, thus, a two-dimensional construct, which is composed of an epistemic, and a motivational dimension, labeled as *inspired by* and *inspired to*. Episodes resembling inspiration have been reported in response to brand experiences (Brakus, Schmitt, and Zarantonello 2009), brand community events (Schouten, McAlexander, and Koenig 2007), and product trials (Lakshmanan and Krishnan 2011).

### **Study 1: Scale Development**

A pool of 37 potential scale items was created using a literature review, a survey of 918 shoppers across various retail industries, an expert panel, and three card-sorting tasks. The potential scale items were then administered to 287 undergraduate students. Using exploratory and confirmatory factor analyses, we eliminated items with low factor loadings, high cross loadings, or high modification indices. Our final 10-item scale consists of 5 items measuring the *inspired by* component and 5 items measuring the *inspired to* component. Both dimensions showed high reliability ( $\alpha > .87$ ), convergent validity ( $AVE > .62$ ), and were distinct to each other, yet correlated ( $r = .76$ ). Full details for this and later studies are available on request.

### **Study 2: Nomological Network**

In order to explore the nomological network of related marketing constructs, we administered the two-dimensional customer inspiration scale to 425 randomly chosen shoppers along with established scales for satisfaction, delight, positive affect, transcendence, idea shopping, impulse purchases, and loyalty intention. While all these constructs were significantly correlated with the two dimensions of customer inspiration ( $r_s > .16$ ,  $p_s < .01$ ), *inspired by* was significantly more strongly correlated with the epistemic constructs, transcendence and delight, whereas *inspired to* showed a stronger correlation with impulse purchases ( $\Delta r > .10$ ,  $p_s < .05$ ), in line with our conceptualization.

### **Study 3: Experimental Manipulation and Predictive Quality**

We expect that a high (vs. low) level of inspirational content in a shopping environment increases the level of being *inspired by* it. This effect should be especially strong for shoppers who are actively searching for new ideas and are, thus, more open to inspiration. To test this interaction, we used a 2 (content: high vs. low) x 2 (idea search: high vs. low) between-subjects design.

We programmed two online grocery shops featuring 4,934 products. In the high content condition, the store additionally included 104 recipes for meal ideas. Participants were asked to imagine planning a dinner party for friends and to shop accordingly. While participants in the low idea search condition were asked to think about what they would buy before entering the store, participants in the high idea search condition were asked to look for ideas in the store. 230 US participants completed this study.

As expected, ANOVA revealed a significant main effect of inspirational content on *inspired by* ( $F(1,226)=18.9, p<.01$ ) and an interaction with idea search ( $F(1,226)=3.20, p=.08$ ). Planned contrasts support an effect of inspirational content in the high idea search condition ( $t(226)=3.39, p<.001$ ) and no significant effect in the low idea search condition ( $t(226)=.77, p=.44$ ).

Furthermore, we tested the power of customer inspiration to predict outcomes beyond and above satisfaction and delight. The inclusion of *inspired by* and *inspired to* improved the prediction of the number of clicks in the store ( $\chi^2(2)=52.25, p<.001$ ), shopping duration ( $F(2,223)=2.41, p=.09$ ), products viewed ( $\chi^2(2)=12.73, p<.01$ ), and purchase intention ( $F(2,223)=4.44, p<.05$ ).

#### **Study 4: Field replication**

To replicate our findings, we installed a promotional display in a local grocery store on two consecutive Saturdays. In the low content condition, the display featured only selected products. In the high content condition, we added three recipes for the selected products. 121 shoppers who passed the display filled out the customer inspiration scale and measures for idea search motivation and related constructs.

Spotlight analysis ( $\pm 1$  SD) supported a significant effect of inspirational content on *inspired by* for shoppers with high idea search motivation ( $t(109)=3.54, p<.05$ ) and no significant effect for shoppers with low idea search motivation ( $t(109)=.93, p=.36$ ). Furthermore, inclusion of the customer inspiration dimensions improved the prediction of the number of products taken from the display ( $\chi^2(2)=12.06, p<.01$ ).

#### **Conclusion and Outlook**

Our results support the reliability and validity of the proposed customer inspiration scale. Furthermore, we explore the nomologic network of customer inspiration, and provide evidence for the experimental and predictive quality of the construct in the lab and in the field. We hope that our work offers firms new ways to differentiate and to improve everyday shopping experience for consumers. Managers can use the proposed scale to assess the current level of customer inspiration, identify shortcomings, set goals, and measure changes over time. Further research is needed on the antecedents and consequences of customer inspiration as well as its potential side effects.

For more information contact: [tim.boettger@unisg.ch](mailto:tim.boettger@unisg.ch)

#### ***A New Test for Mediation in Consumer Research***

Xin (Shane) Wang, Ivey Business School, Western University\*

Jiaxiu He, National University of Singapore, Singapore

David Curry, University of Cincinnati, USA

Methods that correctly detect mediation (when present) and avoid false positives (when mediation is absent) are critical in consumer research. In this paper, we propose and validate a new statistical test for mediation based on likelihood ratio principles rather than estimated regression coefficients. Our work contributes to the literature in five ways. First, by analyzing components of variance, we develop new theoretical arguments to support claims of unresolved and unrecognized problems with current methods. Second, the proposed test performs well regardless of the variable types involved; continuous, binary, or more general categorical variables and with any link function to model relationships among variables. Third, the new test is effective whether mediation is due to linear or nonlinear relationships. Fourth, as we illustrate with real and simulated data, our test is superior to mainstay tests with respect to type I

and type II errors and is more powerful than such tests. Finally, the proposed test is easy to carry out in the majority of situations encountered in consumer research.

The goal of mediation analysis is to establish the extent to which casual variable X, influences outcome variable, Y through mediator, M. Since Baron and Kenny (1986), mediation analysis has been widely used in the social, behavioral, and health sciences (Preacher 2015, Rucker et al 2011). An online search of papers published in *JCP* and *JCR* using the search term “mediation” generated nearly 600 results. We expect applications of mediation analysis to steadily increase as consumer research embraces newer sub-fields such as behavioral economics and neuroscience.

Today’s mainstay tests for mediation use the basic three equation framework: (i)  $\hat{Y} = b_{01} + cX$  ; (ii)  $\hat{M} = b_{02} + aX$  ; and (iii)  $\hat{Y} = b_{03} + c'X + bM$  and share the same statistical machinery. They are *product-of-coefficients* tests. Tests in this category use the product of the estimates  $a \cdot b$ . They express each coefficient either in its original units (Sobel 1982; Baron and Kenny 1986) or in standardized units (MacKinnon and Dwyer 1993; MacKinnon et al 2002; Iacobucci 2012; Hayes 2013), then divide by an estimate of the standard error of the product. Tests in this category differ in their coverage of the eight general cases possible, when each of {X,M,Y} is either {continuous or categorical} and they use different ways to estimate the standard error of the indirect effect  $\sigma_{ab}$ . The oldest approach assumes that  $a$  and  $b$  are normally distributed, hence their product is approximately normally distributed in which case the test uses  $z_s = a \cdot b / \hat{\sigma}_{ab}$  (Sobel). Today’s preferred approaches use bootstrapping to estimate  $\sigma_{ab}$  directly and acknowledge the asymmetric region of rejection produced by bootstrapping (Hayes 2013). Other variations are found in the literature (Hayes and Scharkow 2013, MacKinnon et al 2004, Rucker et al 2011).

To motivate our work, we avoid focusing on problems addressed elsewhere, such as poorly measured variables, correlated mediators, or causal paths that vary in strength across individuals. And we do not adopt the causal modeling framework known as *potential outcomes* (PO), which uses the notion of logical counterfactuals to underpin specific econometric techniques for testing large-scale causal models. (See Coffman and Zhong 2012.) These issues are all important, but we address more fundamental problems with the simple three-variable model used most often in consumer psychology. We examine weaknesses of the product-of-coefficients approach that are in part due to the fact that methods in this class fail to logically (and statistically) separate mediation and linearity, and in part due to common practices among researchers when faced with measures of X, M, and Y that are not continuous.

We report results from simulation studies and analyses of previously published data. We compare results from the proposed test to those from appropriate counterparts. For example, if M is binary, then logistic regression often replaces OLS to estimate relation (ii) and Iacobucci’s statistic is used:  $z_I = \frac{z_a \times z_b}{\hat{\sigma}_{z_{ab}}} = \frac{(a/s_a) \times (b/s_b)}{\sqrt{z_a^2 + z_b^2 + 1}}$  rather than Sobel’s. Results show that the new test is superior

to mainstay tests with respect to type I and type II errors and is more powerful than such tests. For example, in the baseline case when X, M, and Y are continuous and mediation is present, the new test statistic correctly yields significance in almost all scenarios while the standard regression coefficients test does so in fewer than half of the scenarios. (We experimentally manipulate sample size and the degree of mediation in our simulations.) The proposed test has greater power in all scenarios tested. When M is binary, the gap in performance widens. The mainstay test correctly yields significance in only about one-third of the cases tested, while the new test correctly yields significance in nearly every case. We also illustrate that the proposed test is effective whether mediation is due to linear or nonlinear relationships. The new test is easy to carry out in the majority of situations encountered in consumer psychology. Finally, we position the test as a complement to existing methods. For example, if the mediation channeled from X to Y via M is purely



nonlinear, the new test will detect it without any prior knowledge of the particular functional form(s) involved. Analysts who seek to properly specify these forms can use a program such as MEDCURVE (Hayes and Preacher 2010) in a subsequent confirmatory stage.

For more information contact: xwang@ivey.uwo.ca

## ***Individual Papers: Context and Information***

### ***Attribute Matching Increases Confidence***

Hannah Perfecto, University of California Berkeley, USA\*

Jeff Galak, Carnegie Mellon University, USA

Leif D. Nelson, University of California Berkeley, USA

Joseph P. Simmons, University of Pennsylvania, USA

A wide variety of factors affect consumers' confidence in their decisions. Some of these are more objective—such as the quality and quantity of information available—whereas others are more subjective, involving feelings coming from how the decision was made. This latter category has spawned a number of literatures investigating these psychological determinants of confidence. Work on fluency, for example, has shown that making a decision feel easier increases confidence (e.g., Kelley and Lindsay 1993). Similarly, work on regulatory fit, suggests that using a decision strategy that “fits” with one's current mode of thinking increases motivation and certainty regarding one's choice (e.g., Higgins 2000).

In the present paper, we expand upon these two literatures and propose that *attribute matching* can also elicit these psychological effects on confidence. Rather than focusing primarily on how people approach the stimuli (as does regulatory fit) or on the stimuli themselves (as does fluency), we suggest this “feeling of rightness” that increases confidence can be more general, coming from either source, or both. Across five studies, we manipulate salient attributes of the decision frame and options so that participants do or do not experience attribute matching, and find higher reported confidence when they do. In addition, we show this increase in confidence has downstream consequences for consensus estimates, and is mediated by metacognitive ease.

Study 1 (N=306) demonstrates this basic effect. Participants were shown 16 pairs of women's faces—8 were pretested to be attractive (positive valence), 8 were pretested to be unattractive (negative valence)—and asked to select a face from each pair for a hypothetical advertising campaign. To make this choice, half of participants were asked which face of the pair they would choose (positive valence) and half were asked which face of the pair they would reject (negative valence; Shafir, 1993). After each choice, participants reported how confident they were in their preference on a 9-point scale and what percentage of other respondents would also make that choice. The predicted interaction obtained: when the valence of the stimuli matched the valence of the decision frame (i.e., for both attractive/choose *and* unattractive/reject), confidence was significantly higher than in mismatched conditions ( $t_s > 12.11$ ,  $p_s < .001$ ), with confidence mediating consensus.

Study 2 (N=302) extends this phenomenon to multiple levels of attribute intensity, again with valence. Participants evaluated 20 pairs of words that were pretested to be very positive (e.g., love), slightly positive, slightly negative, or very negative (e.g., vomit). As in Study 1, half were asked which word they would choose and half were asked which they would reject. Again, after each choice, participants reported their confidence and consensus estimates. Replicating Study 1 and in line with our predictions, we found a strong linear relationship between the intensity of the attribute match and confidence and consensus ( $t_s > 16.67$ ,  $p_s < .001$ ), as well as confidence mediating consensus.

Study 3 (N=406) moves beyond valence and preferences to a more objective domain. Participants evaluated 10 pairs of foods, pretested to be perceived as very high or very low in calories. Half of participants were asked which food has *more* calories and half were asked which food has *fewer* calories. As in Studies 1-2, participants reported their confidence and consensus estimates after each trial. In line with previous results, on matched trials (i.e., reporting which high-calorie food has more calories or which low-calorie food has fewer), participants reported higher confidence and consensus estimates than on mismatched trials ( $ts > 4.70$ ,  $ps < .001$ ), with confidence mediating consensus.

Having established the basic effect and one downstream consequence, in Studies 4 and 5 we move to confirm our “feeling right” mediator. Study 4 (N=300) replicates Study 2, but with only the 10 very positive and very negative word pairs. Additionally, participants reported how easy the choice seemed on a 9-point scale before reporting confidence and consensus ratings. In addition to replicating our matching effect on confidence and consensus ( $ts > 9.77$ ,  $ps < .001$ ), we found these feelings of ease fully mediating both effects.

Study 5 (N=500) employs an alternative approach to test our proposed mediator: debiasing. Using the 10 positive and negative word pairs and choose/reject manipulation from Study 1, half of participants were told that the valence of the question and choices may impact how easy choosing felt, after choosing but before providing confidence and consensus estimates. Control participants did not receive this additional text and replicated our standard matching effect in confidence and consensus. Critically, debiased participants did not, and, in fact, showed an unpredicted reversal (3-way interaction:  $ts > 9.0$ ,  $ps < .001$ ).

Together, these five studies show a highly consistent pattern: attribute matching increases confidence ratings (which, in turn, increase consensus estimates) because matched-attribute choices foster metacognitive ease, a sense of “feeling right.” We find this pattern emerges not only for questions of preference, where intuition would be leaned on the most, but also for questions that have a correct answer. We look forward to future research investigating other types of matching effects in judgment.

For more information contact: hannah\_perfecto@haas.berkeley.edu

### ***Judgments Based on Stocks and Flows: Different Presentations of the Same Data Can Lead to Opposing Inferences***

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

Nicholas Reinholtz, University of Colorado, USA

Sam Maglio, University of Toronto, Canada

Consumers regularly encounter data reflecting how the world around them is changing. Such data are included in persuasive arguments (e.g., claiming the economy is improving), news stories (e.g., reporting on epidemic outbreaks), and personal activity reports (e.g., tracking workouts). For many such quantities that vary over time, the data may be presented as a stock (level) or a flow (rate). Although each format presents exactly the same information about the change in quantity, even well-educated adults have substantial difficulty translating between stocks (e.g., number of people in a store by minute) and flows (e.g., number of people leaving and entering a store by minute; Cronin, Gonzalez, & Sterman 2009; Sweeney & Sterman 2000; Sterman 2010). Despite this difficulty, both types of presentations are commonly used. The current work examines whether the choice of data presentation format can influence the inferences and judgments consumers make from the data.

When making judgments, people place the most weight on the information that is made the most salient and explicit (WYSIATI, Kahneman 2015; the concreteness principle, Slovic 1972; framing effects, Tversky & Kahneman 1981). This includes information from

graphical displays (Cleveland & McGill 1984; Lurie & Mason 2007). As a result, trends that are made explicit are more likely to influence judgments than trends that are available but must be deduced. Consider a \$1,000 bank account balance that increases to \$1,700, to \$2,100 and finally to \$2,200 with an implied flow of +\$700, +\$400, +\$100. One might judge the balance based on the stock trend (increasing) or the flow trend (decreasing). One common mistake is to conflate the two, inferring that stocks and flows track each other's patterns (Sweeney & Sterman 2000). People are particularly sensitive to ending trends (Duclos 2015) and predict that trends of the evolution of a forecast will continue (Maglio and Polman 2015). Our results indicate that presentation format – and the apparent trend that varies by format – strongly shapes consumer judgments.

*Study 1.* 100 participants were randomly assigned to view US employment data (2007-2013) as either a stock (number of private-sector jobs per month) or flow (number of private-sector jobs gained or lost per month). The most rapid job loss occurred around January 2009 when Barack Obama was inaugurated. The rate of job loss accelerated in the previous year and slowed (but did not reverse) in the year following his inauguration. Although they show the same data, the apparent stock trend during Obama's first year was negative and the apparent flow trend was positive.

When asked "In your view, what effect did Barack Obama have on the American economy during his first year in office?" (1 = "made it much worse," 7 = "made it much better"), flow participants reported that Obama had a positive effect ( $M = 4.84$ ,  $SD = 1.36$ ), whereas stock participants reported that Obama had a negative effect ( $M = 3.32$ ,  $SD = 1.61$ ;  $t(98) = 5.10$ ,  $p < .001$ ); each of these values significantly differed from the midpoint (4 = "made no difference,"  $ps < .01$ ). We do not claim whether one depiction better represents the economy, but rather that they lead to very different judgments.

*Study 2.* 402 participants were randomly assigned to make forecasts based on each of 9 stock graphs or 9 flow graphs. These nine data patterns came from a 3 (overall stock trend: negative, zero, positive) x 3 (overall flow trend: negative, zero, positive) design; domains and magnitudes were randomized across the 9 patterns. To illustrate the patterns, consider a quantity that follows the sequence (32, 41, 47, 50, 50) with the associated flow (+9, +6, +3, +0). This sequence has a positive stock trend (32 to 50) and a negative flow trend (+9 to +0). Participants saw four years of monthly data and the ending quantity and made a forecast of what the quantity would be one year later.

Across the 9 patterns, the modal response reflected a linear extrapolation from the ending trend. In 5 cases, this trend had the same sign for stocks and flows, with the dominant response receiving between 79% and 100% of responses. In the other 4 cases, forecasts followed the observed ending trend, which varied for stocks and flows. For example, for a positive stock / negative flow trend, the modal forecast in the stock condition was no change (41%) and the modal forecast in the flow condition was negative (94%). In each of these 4 cases, the distribution of signed changes varied by condition ( $p < .001$ ).

*Study 3.* We tested whether the differences were due to an inability to comprehend the graphs. We selected the four cases with different ending trends from Study 2, but calibrated the trends differently (e.g., the positive stock / negative flow trends were patterned (20, 32, 41, 47, 50) and (+12, +9, +6, +3), respectively). 605 participants were assigned to one of six conditions in a 3 (Graph: Stock, Flow, Stock+Flow) x 2 (Order: Forecast then Describe; Describe then Forecast) design. Participants in the Stock+Flow condition saw both graphs; their responses fell between the Stock and Flow participants and we do not discuss them further. The Forecast task was like the Study 2 task. The Describe task asked participants to read and compute quantities from the graph rather than make a forecast of the future.

Aggregate results replicated Study 2. When the sample was limited to observations on which participants read the graphs correctly (42%, in line with Cronin et al. 2009), the differences persisted when flows trended upwards or downwards. For example, for a positive stock /

negative flow trend, the modal forecast in the stock condition was positive (97%) but the modal forecast in the flow condition was negative (41%;  $p < .001$ ).

These results show that the decision to present data as stocks or flows, despite being formally equivalent, is not a neutral choice. Stark differences in judgment valence result from such differences, even among those who demonstrate a priori that they can accurately describe such graphs.

For more information contact: [stephen.spiller@anderson.ucla.edu](mailto:stephen.spiller@anderson.ucla.edu)

### ***Simultaneous vs. Sequential Presentation of Online Reviews***

Noelle Nelson, University of Kansas, USA\*

Amin Attari, University of Kansas, USA

The importance of online shopping in the marketplace became extremely clear when Amazon.com recently surpassed WalMart to become the largest retailer in the US. A large part of Amazon's attractiveness has been due to the participation of consumers in online reviews. Research has examined reviews from the perspective of word-of-mouth (Chevalier & Mayzlin, 2006), for example, but we suggest that another important aspect of online reviews is not the content, but the presentation of the reviews: whether they are seen all on one page, or one at a time. Many sites offer both options, but each may affect consumer perceptions differently.

Research into simultaneous versus sequential visual presentation of crime suspects suggests that simultaneous presentation primes a more relational processing style while sequentially presented items prompt people to process each item individually and serially (Lindsay & Wells, 1985). Therefore, we also expect the arrangement or ordering of the reviews within a set to play a role. In relational processing, people examine information as it relates to other information, sometimes determining which the dominant influence is. If, for example, a predominately positively reviewed product has a few grouped negative reviews, those will easily be seen as minor relative to the positive reviews, leading to overall positive product attitudes. On the other hand, if the few negative reviews are randomly interspersed, they will seem to be a bigger part of the picture, resulting in a relatively less positive attitude. If a predominately positively reviewed product is processed in a *serial* manner (due to sequential presentation), a run of negative reviews (grouped) will be seen as relatively high frequency in the overall set, leading to less positive attitudes. Sporadic spacing of negative reviews can be easily discounted in the series of overall positive reviews, leading to relatively more positive attitudes. Of course, if the reviews are mostly negative, we expect an entire reversal of the results.

Formally,

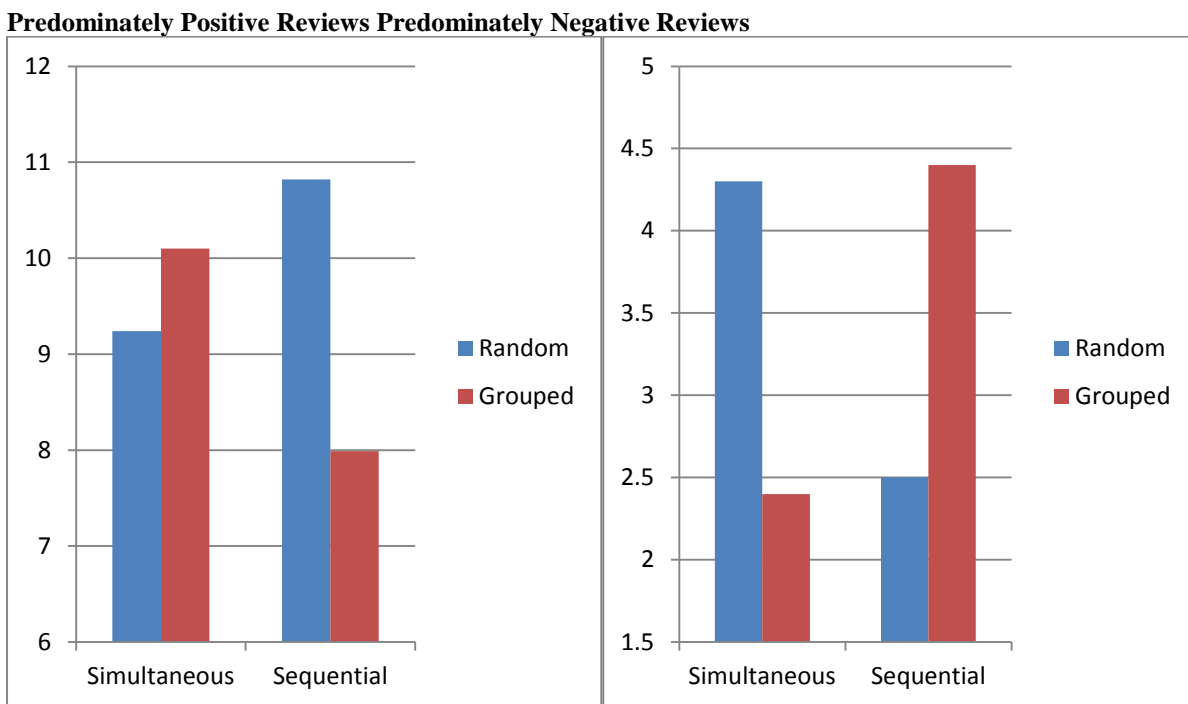
H1: For products with mostly positive reviews, simultaneous (sequential) presentation of reviews will lead to better (worse) attitudes toward the product when the positive and negative reviews are grouped together versus when they are interspersed and seemingly randomly ordered.

H2: For products with mostly negative reviews, the expectations reverse.

We confirm these hypotheses in three studies. Study 1a and Study 1b examine our hypotheses on attitudes (WTP) using different products and different operationalizations of the review order construct. In study 2, we examine the underlying process of how positive the reviews were perceived overall, which is a result of the review presentation and order, and therefore the processing style invoked.

Study 1a was a 2 (presentation: simultaneous vs. sequential) x 2 (order: random vs. grouped) x 2 (dominant valence: positive vs. negative) between subjects design. To obtain sufficient N, 102 undergraduates and 325 online participants participated in the study in exchange for either course credit or \$1. Participants evaluated online reviews for a mug that changed color when warmed. Half the participants were presented with the reviews all on one page (simultaneously) while the other half read each review one page at a time (sequentially). The order of reviews was fixed and followed either a seemingly random pattern or positive reviews and negative reviews were grouped separately. Finally, the reviews were either predominately positive or negative (i.e., either 7 positive reviews and 3 negative, or vice versa). Finally, participants indicated, on a scale from \$2 to \$80, their WTP for the mug.

We found the expected 3-way interaction between review presentation, grouping, and valence on WTP ( $F(1, 419) = 8.46, p < .01$ ) depicted in the graph below. Specifically, when participants were shown primarily positive reviews sequentially (simultaneously), they had a higher (lower) WTP when those reviews were ordered randomly, versus in groups. When participants saw reviews that were generally negative, these relationships reversed.



Study 1b had the same design but differed from study 1a in a few aspects. First, the product was an alarm clock that lit up gradually, mimicking the sun. Second, the scale for WTP was \$0 to \$50. Finally, we varied the review ordering: they were still either seemingly random or grouped, but different from study 1a to provide another operationalization of the construct. Again, we found the expected 3-way interaction on WTP ( $F(1, 184) = 3.59, p = .06$ ); the means were in the same pattern as study 1a.

Study 2 was designed to show that participants' attitudes toward the product varied as a function of presentation, order and valence because these factors affected the perceived positivity of the reviews in general. For predominantly positive reviews, in the simultaneous condition, participants will be processing the information holistically and negative reviews that are grouped (randomly ordered) should be seen as less (more) important to the overall 'picture' leading to greater (lesser) perceived positivity. The opposite will be true when the majority is negative. On the other hand, sequentially presented reviews will lead to serial processing of each individual review, which will make a group of minority reviews seem frequent and relatively important, but easily discounted when they are randomly ordered. This leads to a reversal of the effects found in the simultaneous condition.

The design of study 2 was identical to that of study 1a, but instead of WTP, participants were asked to indicate the overall positivity of the reviews they read. We find a 3-way interaction ( $F(1, 121) = 5.24, p < .05$ ) of general positivity that replicates the findings for WTP in the previous two studies.

Overall, we find consistent results for our hypotheses across different products and begin to see process evidence in study 2 that indicates that perceived positivity of the reviews overall drive the effects on attitude (WTP) for the product.

For more information contact: noellenelson@ku.edu

### ***Paying People to Look at the Consequences of Their Actions***

Daylian M. Cain, Yale University, USA\*

Jason Dana, Yale University, USA

How does one persuade consumers to engage in prosocial action or at least refrain from antisocial actions? People are more willing to cause harm if they can do so in ignorance, or if they can at least *plausibly deny* that they knew they were causing harm. Experiments on “strategic ignorance” (Dana, Weber, & Kuang, 2007; Larson & Capra, 2009; Grossman, 2010; van der Weele, 2011), for example, show that participants often refuse free information about the impacts of their choices on others so that they can act more selfishly. We replicate strategic ignorance and also show that paying people small amounts of money to receive information about the social consequences of their actions can dramatically reduce strategic ignorance and efficiently increase overall welfare.

In our dictator game variant, “senders” faced a choice between receiving \$6 or \$5 for themselves, with this choice having uncertain effects on the payoffs to the “receivers.” Specifically, choosing \$6 left the receiver either better off (getting \$5 instead of \$1) or worse off (getting \$1 instead of \$5). A coin flip prior to the session determined whether the payoffs were aligned or conflicted. Although the coin flip structure and payoff possibilities were publicly announced, the results of the coin flip were not. Senders could privately look at which payoff state they were assigned (aligned or conflicted) by clicking a small button on the right side of the screen marked “Reveal Payoffs.” However, the sender could choose his or her payoff without revealing the payoff state. Because the reveal decision is private, a receiver who ended up with \$1 would not know whether the sender knowingly chose this payoff (\$6, \$1) or chose it in ignorance (\$6, \$?). We tested various payments for looking—look for free, 25 cents to look, \$1 to look, or a “Tom Sawyer” treatment where participants were offered to *pay* 25 cents for revealing the consequences of their actions. Charging participants or letting them look for free does not work as well to promote generosity as does paying them to look. More surprisingly, we show that the effect of these payments is not merely due to increased looking. Even conditional on looking, participants who were paid to look are more prosocial than those who look for free. We speculate on various mechanisms, testing wealth effects (using unconditional payments of an extra 25 cents vs. paying 25 cents to look), and whether it becomes less plausible for participants to claim ignorance when it is known (vs. unknown) that they were paid to look.

Our results tie into a number of literatures. A growing empirical and theoretical literature seeks to understand the economic consequences of strategic ignorance (Grossman, 2010; van der Weele, 2012) or rational ignorance (Nyborg, 2011). Offering various payments for consuming information suggests a mechanism for quantifying the value of such ignorance. Furthermore, our method is innovative in that we intervene at an early point in the decision chain. Specifically, rather than paying people to be generous, we are merely paying them to be informed about the effects of generosity. Perhaps our payments allow people to feel that they acted on their own values once informed. In this vein, several papers explore the phenomenon of agents “sorting out” of situations that will make

them feel guilty about taking selfish actions (see Dana, Cain, & Dawes, 2006; Lazear, Malmendier, & Weber, 2012; Dillenberger & Sadowski, 2010; and, for a review, see Cain, Dana, & Newman, 2014). For example, someone may want to avoid those who are in desperate need in case one will feel compelled to help. Our payments are a nudge towards generosity because they encourage people to sort *into* a situation that activates social preferences without otherwise restricting them from acting selfishly. Our results suggest an efficient way to change behavior; it may be cheaper to pay someone to look at information about his or her social/environmental footprint than it would be to directly monitor and reward pro-social behavior.

These results suggest several practical applications. Consider the example of blood donation. One problem with cash compensation for donation is adverse selection; payments can attract low-quality donations from so-called “skid row donors” (Titmus, 1969) who would otherwise not donate. In contrast, small incentives for people to learn about blood shortages and the donation process should be less likely to attract low-quality donations; skid row donors might take the payments to look at the need for donations but not act by donating blood for free. These incentives would be highly effective in the case of advantageous selection, for example, if many of the people who choose to remain uninformed are the same people whose sympathies would be most evoked once informed. As another example, it may be cheaper and more pragmatic to pay people to look at their HIV statuses so that they better regulate themselves than to monetize actual safe sex practices. It is hoped that payments to look at test results attract at-risk individuals to become tested. Furthermore, such payments also undermine plausible excuses for not knowing one’s test results. Thus, anyone who can claim to be risk-free might still be getting tested, if only to get paid. In the case of infectious diseases, anyone who infects another person has more difficulty in claiming ignorance when it is known that people are paid to know their statuses. Of course, such ideas are only speculative at this point, but our results suggest that offering subsidies to look at the consequences of one’s own actions can efficiently encourage people to behave prosocially.

For more information contact: [daylian.cain@yale.edu](mailto:daylian.cain@yale.edu)

**Break**

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

**Grand Palm Col. West**

**PLENARY SESSION 1 – George Loewenstein, Carnegie Mellon University**

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

**Tarpon/Sawyer/Long**

**Break**

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

**Grand Palm Col. West**

## **Symposium: Context Effects in Word-of-Mouth (WOM): How Innocuous Characteristics of Message Generation Influence Sharing and Persuasiveness**

**Chair:** Christilene du Plessis, Rotterdam School of Management, Erasmus University, The Netherlands

### ***Context Effects in Word-of-Mouth (WOM): How Innocuous Characteristics of Message Generation Influence Sharing and Persuasiveness***

Evan Weingarten, University of Pennsylvania, USA\*

Jonah Berger, University of Pennsylvania, USA & Cornell Tech, USA

People frequently talk about experiences in everyday life. They may discuss the embarrassment they felt encountering an ex the previous day, a recent frustrating sports game, or an exciting upcoming weekend. Yet, these events are embedded in a temporal context occurring in the past or future. How might the temporality of an event change whether people talk about it?

We propose that whether people are likelier to discuss events in the future or past depends on two factors: arousal and self-presentation. Research suggests that people are likelier to share more arousing events (Berger, 2011; Berger & Milkman, 2012), and other work contends the future is more arousing than the past (Van Boven & Ashworth, 2007). Therefore, an event occurring in the future will be likelier to be shared than the same event in the past due to the former's heightened arousal.

However, this pattern should be moderated by whether the event reflects badly or not on the sender. Self-presentation can shape sharing: people are more likely to share things that reflect favorably rather than unfavorably on the self (De Angelis et al., 2012). Because the influence of arousal depends on the dominant response to a context (e.g., sharing things that reflect well, not sharing things that reflect badly; Zajonc, 1965), we argue that while the future's increased arousal will boost sharing for events that don't reflect badly on the self, this relationship won't persist and may reverse for events that reflect badly on the self. We test these hypotheses in six studies.

Study 1 (N = 111) tests how temporality influence sharing for events that don't reflect badly on the sharer. Participants imagined they were either going on vacation a week from now (future) or had come back from vacation a week ago (past), and indicated how likely they are to talk about the vacation. As predicted, participants indicated they would be likelier to talk about the future (M = 5.98) than past vacation (M = 5.3;  $F(1, 109) = 7.96, p = .006$ ).

Study 2 (N = 109) provides process evidence by measuring arousal (Berger, 2011). Participants read about a fancy meal that will either occur a week from now or occurred a week ago. Per our theory, senders were more likely to share a future (M = 4.72) compared to past meal (M = 3.98;  $F(1, 107) = 4.45, p = .037$ ) and felt more arousal when imagining the future meal. Arousal mediated the effect of temporality on sharing (95% CI [.43, 1.28]).

Study 3 (N = 229) applies our theory to a real event: a concert for a major pop star. Participants were asked about their likelihood of talking and felt arousal about the concert either a week before (future) or a week after (past). As in study 2, participants were more likely to talk about the future concert (M = 5.07) than the past one (M = 4.60;  $F(1, 227) = 5.53, p = .02$ ), felt more arousal for the future; arousal mediated sharing (95% CI [.02, .44]).



In study 4 ( $N = 143$ ) we manipulated arousal, predicting we should only observe the past/future asymmetry in sharing for more arousing events. Subjects read a scenario that either occurred a week ago or will occur a week from now; some subjects were told they would “hang out” with their best friend (high arousal), whereas others were told they would “hang out” with an acquaintance (low arousal). Consistent with our predicted interaction ( $F(1, 139) = 4.00, p = .047$ ), people were likelier to share the future event when it was with their best friend ( $M_{\text{Future}} = 5.63$  vs.  $M_{\text{Past}} = 4.76$ ;  $F(1, 139) = 5.08, p = .026$ ). No difference in sharing, between past and future events, occurred for acquaintances ( $F < 1$ ). Moderated mediation evidence showed arousal mediated sharing in the best friend (95% CI [.20, .96]) but not in the acquaintance condition (95% CI [-.84, .30]).

Study 5 ( $N = 245$ ) explores whether the increased likelihood of discussing future events is moderated by self-presentation. Participants read, and indicated likelihood of talking about incurring a fee either in the future or the past; this fee either reflected badly on the self (they paid their rent late) or did not reflect badly on the self (the fee was for maintenance costs). We observed our interaction ( $F(1, 241) = 8.59, p = .004$ ): in the maintenance condition (not reflect badly), people were more likely to share the future ( $M = 5.24$ ) rather than past fee ( $M = 4.50$ ;  $F(1, 241) = 4.77, p = .03$ ); however, the opposite was true in the late rent (reflect badly) condition ( $M_{\text{Future}} = 2.93$  vs.  $M_{\text{Past}} = 3.58$ ;  $F(1, 241) = 3.84, p = .051$ ).

Study 6 ( $N = 603$ ) extends study 5 with process evidence. Participants imagined a court date one week from now or a week ago. We also manipulated whether senders were in court for stealing (reflect badly) or jury duty (not reflect badly). As predicted, we observe an interaction ( $F(1, 599) = 8.20, p = .004$ ) by which participants were more likely to discuss the future court date ( $M = 5.13$ ) than the past one ( $M = 4.51$ ;  $F(1, 599) = 10.75, p = .001$ ) when it was for jury duty. This pattern was directionally reversed for the court date for stealing ( $M_{\text{Future}} = 2.18$  vs.  $M_{\text{Past}} = 2.35$ ;  $F(1, 599) < 1$ ). Further, we found moderated mediation: arousal positively mediated sharing in the jury duty conditions (95% CI [.06, .25]), but negatively mediated sharing in the stealing conditions (95% CI [-.37, -.06]).

Ultimately, these studies investigate how an event’s temporal context (past or future) shapes whether it is shared.

For more information contact: [ewein@wharton.upenn.edu](mailto:ewein@wharton.upenn.edu)

### ***The Effect of Environmental Crowdedness on Information Sharing***

Irene Consiglio, Nova School of Business and Economics, Portugal\*

Matteo De Angelis, LUISS Guido Carli University, Italy

Michele Costabile, LUISS Guido Carli University, Italy

Consumers’ ever-increasing mobile connectivity allows them to share information while being among few or many other people (e.g., in stores, coffee shops, events and conferences). In this research, we study if varying levels of environmental crowdedness influence consumers’ propensity to engage in word-of-mouth (WOM).

Though prior research has shown that individuals who are in more (vs. less) crowded places experience a loss of perceived control (Baum, Aiello & Calesnick, 1978), it remains unclear how this will influence WOM. We propose that, because senders feel that they are in less control in crowded environments and are therefore motivated to engage in behaviors that restore control (Kay et al., 2010; Langer, 1975), they will be more likely to share information as a way to regain control.

WOM can restore perceived control for a number of reasons. First, it is a means to affirm one’s self (e.g., Belk, 2013) and, when personal control is threatened, self-affirmation allows people to restore their view of being in control (Liu & Steele, 1986). Second, WOM

strengthens social connections (Dunbar & Dunbar, 1998), and people with tighter social networks perceive greater control over the events they face (Cohen, 1981). Third, individuals often engage in WOM to advise and influence others (Fitzsimons & Lehmann, 2004; Berger, 2014), which may increase their perception of control (Sommer & Burgeois, 2010).

Thus, prior research corroborates the hypothesis that WOM can be used to compensate for a feeling of low control induced by crowded environments. We present three experiments and two surveys that offer evidence for this prediction.

In study 1 ( $N = 86$ ), participants were invited 25 at a time. In the *crowded* condition, all attending participants were seated in the same 24-person classroom; in the *control* condition, participants were divided into two 24-person classrooms. Participants in the *crowded* condition were more likely to share the content of an article with others ( $M = 3.61$ ) than participants in the *control* condition ( $M = 2.80$ ;  $t(84) = 2.19, p < .05$ ).

In study 2 ( $N = 119$ ), participants were invited eight at a time. Participants in the *crowded* condition were seated in a 4-person lab room; whereas participants in the *control* condition were seated in two 4-person lab rooms. Consistent with the proposed process, results revealed that the effect of crowdedness was moderated by participants' need for control (3-item scale based on Burger and Cooper 1979;  $b = 1.08, t(115) = 1.91, p = .01$ ): Individuals who had a chronically higher need for control (+1SD) were more likely to share content with others when they were in a crowded room ( $b = 1.27, t(115) = 2.85, p < .01$ ), as compared to their counterparts who were in a less crowded room; individuals who had a lower need for control (-1SD) were not affected by crowdedness ( $p > .29$ ).

In study 3, we tested whether the likelihood to engage in WOM would be attenuated for participants who were able to restore their control by completing a puzzle on their mobile devices. Respondents ( $N = 164$ ) completed an online survey. First, they reported their current location and rated how crowded it was. Next, they completed a puzzle. The goal of this puzzle was to draw a picture by clicking some dots with sufficient accuracy. Regardless of their real performance (which was similar between conditions), participants in the *control over outcome* condition saw the correct solution to the puzzle, whereas participants in the *no control over outcome* condition produced a scribble. As expected, participants in the *no control over outcome* condition felt in less control over the outcome ( $M = 3.65$ ) than participants in the *control over outcome* condition ( $M = 5.86$ ;  $t(137) = 8.37, p < .001$ ). Finally, participants indicated the likelihood that they would share an article with others. As predicted, there was an interaction between crowdedness and opportunity to restore control ( $b = -0.41, t(135) = -2.41, p < .05$ ): Crowdedness had a positive effect on WOM when participants did not have an alternative means to restore control ( $b = 0.32, t(135) = 2.62, p < .01$ ). The effect was not significant in the *control over outcome* condition ( $p > .46$ ).

In study 4 ( $N = 199$ ), respondents filled in a survey in the lobby of a movie theater. They rated how crowded the location was; next, they could share a real promotion on their favored social network. Results indicated that the more the movie theater was crowded, the less control respondents perceived to have, which in turn increased the likelihood that they shared information about the promotion on social media (90% CI [.01, .14]).

In study 5 ( $N = 101$ ), we tested the robustness of the role of perceived control as a mediator. Moreover, we tested whether the effect of crowdedness on WOM through perceived control would be moderated by trait reactance (Hong and Page 1989). Indeed, the positive indirect effect of crowdedness through perceived control should be observed among those individuals who have a higher chronic reactance, because these individuals should be strongly motivated to reestablish their control (e.g., Brehm and Brehm 1981). Consistent with this hypothesis, a greater lack of control led to greater likelihood to share, but only among respondents who had high chronic reactance (+1SD; 95% CI [ $> 0, .31$ ]; moderated mediation index: 95% CI [.03, .30]). In study 5, we also ruled out a number of alternative mechanisms, as perceived anonymity, self-alienation, and relatedness did not mediate the effect of crowdedness on likelihood to share, even when these indirect effects were moderated by relevant individual traits.

This research offers two main theoretical contributions. First, we shed light on how the physical context in which WOM occurs affects the likelihood of sharing information. Second, we suggest that a previously overlooked motivation might underlie WOM: the need to restore control. This research also has interesting managerial implications. Indeed, marketing practitioners might increase sharing by sending targeted, real-time communications to consumers who are in crowded spaces.

For more information contact: irene.consiglio@novasbe.pt

***Paying Peanuts Lowers Legitimacy: When and Why Monetary Incentives Hinder WOM Sender Persuasiveness***

Christilene du Plessis, Rotterdam School of Management, Erasmus University, The Netherlands\*

David Dubois, INSEAD, France

Companies increasingly provide incentives to consumers for participating in advocacy programs or posting product reviews online. In a recent study, Amazon found that, of its 1,000 most active reviewers, 85% are incentivized and 92% of incentivized reviewers write reviews about the free products they received (Pinch & Kesler, 2010).

How do incentives influence review effectiveness and effort? On the one hand, studies have found a significant positive correlation between incentive size and task performance (e.g. Heyman & Ariely, 2004). Other works showed that people do not exert effort on a task unless it contributes to their own economic well-being (e.g. Lock et al., 1980; Gerhart et al., 2009). A survey of top executives in different industries (N = 23) confirmed that 70% of them believe that paying for reviews increases review effectiveness. Taken together, these findings suggest that monetary incentives may lead to higher quality reviews. On the other hand, researchers have argued that external rewards can be ineffective (see Pfeffer, 1998) possibly because incentivized WOM senders invest less effort in the review writing process (e.g. Deci et al., 1999; Gneezy & Rustichini, 2000). These findings suggest that monetary incentives might decrease review effectiveness.

Beyond the role of effort, this research proposes that monetary incentives can alter review content by affecting how legitimate senders feel when generating their review. Money is a social cue which signals reward in a similar manner to praise (Saxe & Haushofer, 2008). Furthermore, research shows that the social meaning of money can be transferred to the self (Vohs, Mead & Goode, 2006; Yang et al., 2013). As such, WOM senders may interpret monetary incentives as social signals. Specifically, we propose that the size of the incentive can influence senders' feelings of legitimacy and result in shifts in their expressed certainty. In particular, we expect that low monetary incentives can trigger low feelings of legitimacy, compared to significant monetary incentives or no incentives. In turn, because feeling legitimate is a key antecedent to certainty – the sense of conviction that one's attitudes are correct (Rucker et al., 2014) – we hypothesize that low legitimacy will induce consumers to express less certainty in their reviews.

We further hypothesize that money is a contextual factor that alters what senders rely on when judging the legitimacy of their attitude. When senders are paid, they rely on the size of the reward to feel legitimate. A low reward might trigger senders to lose their feelings of legitimacy, decreasing expressed certainty. In contrast when senders are not given an incentive (i.e., when social cues are absent) or when monetary incentives are significant (i.e., social cues are adequate), the sender will rely on their own experiences, resulting in greater certainty (Rucker et al., 2014).

Three experiments tested the effect of monetary incentives on the certainty expressed in review content. Importantly, across experiments, WOM receivers were blind to whether senders had been paid or not, or how much they had been paid.

In study 1, participants (N=83) were either paid a bonus of \$1 or no bonus to write a review about an online game. These reviews were later rated by 975 MTurkers ( $\pm 11$  raters per review) on review positivity, descriptiveness, objectivity and reviewer certainty. Random effects regression showed that paid WOM senders expressed less certainty in the content of their reviews ( $M = 5.21$ ) than unpaid senders ( $M = 5.43$ ;  $b = -.11$ ,  $t(80) = -2.78$ ,  $p = .007$ ). Importantly, the reviews did not differ in positivity or objectivity (all  $ps > .05$ ).

In study 2, participants (N=86) were either paid a bonus of \$1 or no bonus to write a review about an online game. A separate sample of 841 mTurkers ( $\pm$  nine raters per review) were randomly presented one of these reviews and rated how doubtful they were of the quality of the reviewed product, in addition to how uncertain they believed the reviewer was based on the review. Random effects regression showed that people perceived paid senders to be more uncertain of their opinions ( $M = 2.67$ ) than unpaid senders ( $M = 2.46$ ;  $b = .09$ ,  $t(83) = 1.96$ ,  $p = .05$ ). Importantly, paying the sender (vs. not paying) had a significant positive indirect effect on the receivers' product quality doubts through perceptions of reviewer uncertainty (95% C.I. = .002, .07).

In study 3 we test whether increasing the size of the incentive reverses the effect of incentive provision on attitude uncertainty. We also tested if legitimacy mediates the effect of providing a small incentive on attitude uncertainty. Dutch students (N = 205) took part in this study in exchange for course credit and were randomly assigned to receive no payment, 10 cents or €10 as a bonus payment for writing a review. Participants were told to use a set of headphones to watch two videos, write a review of the headphones and then answer questions. In line with our prediction, paying a WOM sender a small ( $M_{10c} = 2.45$ ) versus no ( $M_{€0} = 2.21$ ) or high ( $M_{€10} = 2.19$ ) incentive increased uncertainty ( $F(1, 204) = 3.95$ ,  $p < .05$ ). Senders who received a small incentive ( $M_{10c} = 3.45$ ) versus no ( $M_{€0} = 4.36$ ) or high ( $M_{€10} = 4.43$ ) incentive also felt that their opinion was less legitimate ( $F(1, 204) = 41.32$ ,  $p < .001$ ). Moreover, legitimacy mediated the positive effect of receiving a small incentive on attitude uncertainty (95% C.I. = [.03, .16]).

Overall, the results demonstrate that the quality of WOM may stem from feelings of legitimacy and that providing an incentive shifts the source of legitimacy from senders' experiences (internal) to the size of one's reward (external). Importantly, this work contributes to past work on consumers' certainty by documenting for the first time how a contextual factor (i.e., money) affects certainty by altering feelings of legitimacy.

For more information contact: [duplessis@rsm.nl](mailto:duplessis@rsm.nl)

### ***In Mobile We Trust: How Mobile Reviews can Overcome Consumer Distrust of User-Generated Reviews***

Andrew T. Stephen, University of Oxford, England

Lauren Grewal, University of Pittsburgh, USA\*

Over half of the world uses mobile devices. One common use of these devices is reporting of a consumption experiences (e.g., posting a hotel review). The rising use of mobile has prompted a stream of research that attempts to understand the relationship between mobile and consumer behavior (Shankar et al., 2010; Bart et al., 2014). Here we consider how consumers perceive and respond to consumer-generated reviews when they are posted from mobile versus non-mobile devices. Consumers increasingly know this distinction because a trend among popular review sites (e.g., TripAdvisor) is to add labels to reviews from mobile devices (e.g., "via mobile"). Across five studies, we examine how this subtle contextual cue affects consumers' perceptions of the review and purchase intentions.

We hypothesize that extra effort is required when writing reviews from mobile, leading consumers to believe that, compared to reviews from non-mobile devices, mobile reviews are more reflective of a reviewer's true experience. We posit this is because consumers think

that to write a thoughtful review on a mobile device, more effort is physically needed, and once more effort has occurred, a review is perceived as more trustworthy (Ghose et al., 2013; Walther et al., 2005). Once a review has been seen as more trustworthy, we hypothesize that consumers will perceive higher accuracy. This higher accuracy is then expected to lead to higher purchase intentions/consideration of the reviewed product or service provider. This increased intentions/consideration is only expected to occur, however, when reviews are generally positive and, critically, when consumers are skeptical of the credibility of consumer-generated reviews in general. Thus, we propose that mobile reviews help consumers overcome skepticism that would otherwise lead them to discount a reviewer's opinion, thereby allowing the review to have a stronger impact on a consumer's attitudes.

Study 1a (N = 67) tested the effect of mobile vs. non-mobile reviews on purchase consideration with a 2(mobile, non-mobile) x 2(positive rating, negative rating) between-subjects design. To manipulate mobile versus non-mobile, a label said "via mobile" or "via desktop," in line with TripAdvisor. To manipulate rating valence, the reviewer's rating was either 4 (positive) or 2 (negative). After reading the review, participants indicated their interest in booking a stay at the reviewed hotel if they were visiting that location (1 =definitely not, 5=definitely yes). Results supported our prediction that mobile reviews are associated with higher purchase intention, but only for favorable reviews. In the positive rating conditions there was a significant difference between mobile (M = 3.60) and non-mobile (M = 2.86) reviews ( $F(1, 63) = 6.96, p = .01$ ). There was no significant difference in the negative rating conditions ( $M_{\text{mobile}} = 2.79$  vs.  $M_{\text{nonmobile}} = 2.74, F(1, 63) < 1, p = .83$ ).

Study 1b (N=72) looked at the effect of mobile vs. non-mobile for a positive review in a different context. We measured purchase consideration in the same way as Study 1a but for a restaurant review. We found a significant difference between mobile (M = 3.60) and non-mobile (M = 3.25) reviews that replicated the findings of Study 1a, ( $F(1, 70) = 4.40, p = .04$ ).

Study 2 (N=65) tested the proposed moderation process of skepticism with a 2(mobile, non-mobile) between-subjects design. The reviews in the positive rating condition from study 1a were used. We measured purchase consideration and general skepticism, which was expected to moderate the effects seen in Study 1a/b with nine items measured on seven-point Likert scales (e.g., "I am skeptical of online user-generated reviews,"  $\alpha = .93$ ). These items were averaged to form a general measure of skepticism of online consumer-generated reviews. We found a significant difference between mobile (M = 3.50) and non-mobile (M = 3.05) reviews, ( $F(1, 63) = 4.82, p = .03$ ). This difference only existed at higher (+1SD) levels of skepticism (95% CI = [.05, 1.2]) while no significant differences existed between mobile and non-mobile for lower (-1SD) skepticism (95% CI = [-.58, .70]).

Study 3a (N = 56) tested the proposed accuracy-mediated process with a 2(mobile, non-mobile) between-subjects design. The same hotel reviews were used. We again measured purchase consideration and additionally measured perceived accuracy of the review with six items on seven-point Likert scales (e.g., "The information in this review was accurate,"  $\alpha = .90$ ). These items were averaged to form a measure of the hypothesized mediator, perceived review accuracy. We also measured general skepticism as we did in Study 2, which was expected to moderate the hypothesized mediated process. We tested our predictions using conditional indirect effects analysis (Hayes 2013 model 15). The results confirmed our hypotheses. Specifically, the indirect effect of mobile versus non-mobile reviews on purchase intention through perceived review accuracy was positive and significant but only at higher (+1SD) levels of skepticism (95% CI = [.01, .26]). When skepticism was lower (-1SD) the indirect effect was not significant (95% CI = [-.11, .10]).

Study 3b (N = 80) examined the process leading to perceived accuracy more closely. Participants read the same mobile review from the previous study and indicated their perception of review accuracy on the same six-item scale used previously. Additionally, perceived review-writing effort was measured with six items (e.g., "The reviewer put a lot of effort into writing this review"  $\alpha = .88$ ), and perceived trust in the reviewer with six items (e.g., "The reviewer can be trusted"  $\alpha = .85$ ). Results from a conditional indirect effects analysis (Hayes 2013 model 4) indicate that higher perceived review-writing effort leads to enhanced perceptions of reviewer trust, which in turn predicts higher perceived review accuracy (95% CI = [.18, .43]).

This research contributes to the literature on consumer-generated reviews and WOM referrals by showing how the context in which a review is written—mobile or non-mobile—affects consumers’ attitudes and purchase intentions. We show that receivers, particularly skeptical ones, perceive mobile reviews as more accurate and therefore have higher purchase intentions, and that this accuracy is associated with greater perceived effort in review writing and reviewer trust.

For more information contact: laurengrewal@gmail.com

## ***Symposium: Doing Well by Doing Better: Strategies to Increase Consumer Participation in Charitable Campaigns***

**Chair:** Grant Donnelly, Harvard Business School, USA

### ***Voting for Charity: The Benefits for Firms of Direct Consumer Involvement in Charitable Campaigns***

Grant Donnelly, Harvard Business School, USA\*

Duncan Simester, Massachusetts Institute of Technology, USA

Michael Norton, Harvard Business School, USA

Recently, a new form of corporate social responsibility has emerged, which invites the customer to select the cause they wish to support through the purchasing of a specific item (Robinson, Irmak & Jayachandran, 2012). While research has evaluated consumer impressions to voting empowerment in corporate social responsibility activities (Robinson, Irmak & Jayachandran, 2012), we evaluate such empowerment in ‘pure’ donations and the resulting financial decisions of voting and non-voting consumers. Across two field studies at multiple store locations of a large grocery retailer, we give some consumers the opportunity to vote for the cause that the firm will support, while others are merely informed of the firm’s charitable actions. Consumers given the opportunity to “vote for charity” upon entering a retailer exhibited increased purchasing and membership renewals during in-store visits.

Study 1 was designed to investigate whether inviting customers to participate in a firm’s corporate giving program affects the customer’s subsequent purchasing behavior. The study was conducted with the cooperation of a large retailer similar to Costco. This first field experiment was conducted over 10 weekdays at one of this retailer’s New England stores. Two research assistants were positioned at the front entrance of the store and intercepted customers as they entered the store. They implemented two experimental conditions. In the “voting” condition, the assistants gave the customers a 1-page description of three local charitable organizations, stating that this store planned to give a total of \$4,500 that month to these charities. The three charities were selected by the retailer’s charitable foundation and the local store manager. Customers were asked to help the retailer decide which charity should receive the largest grant. The charity that received the most customer votes would receive a \$2,500 grant, while the other two charities would receive a \$1,000 grant. After the study the retailer actually made these grants in accordance with this policy.

In the second treatment, the “information” condition, the assistants gave the customers the same 1-page description. However, they did not ask them to vote on which charity should receive the grants. The information condition was designed to serve as a control condition. It controls for the possibility that merely providing information about the retailer’s charitable giving could influence customer behavior.

The days were divided into two day-parts: mornings (9am – 1pm) and afternoons (2pm – 6pm) and the experimental treatments were rotated between these day parts across the 10 test days. We received transaction data that included a time stamp and we used this time

stamp to match the transactions to the treatments. In particular, for the morning day-part we used transactions between 9am (the retailer opened at 9am each morning) and 1:15pm. For the afternoon day-part, we used transactions between 2:30pm and 6:15pm.

Across the 10 days we observed 5,010 baskets in the information condition and 5,048 baskets in the voting condition. In our initial analysis we measured basket size using dollar revenue, with a log transformation to control for outliers. The average log revenue in the voting condition is 4.02, compared to 3.98 in the information condition. The difference between these averages is significant ( $p < 0.05$ ,  $t = 1.99$ ). The use of the log transformation means that the exponent of the difference between the two conditions reveals the % difference in the basket sizes. Giving customers a choice about which charity would receive the next grant increased their average basket sizes by 4.2%. The median basket size is \$248, and so this translates to a \$10.41 increase in the average basket size.

In our next analysis we investigate whether the voting treatment had a stronger impact on purchases of items associated with pro-social behaviors. To identify these items a research assistant visited one of the retailer's stores and identified products with 15 different packaging labels. The findings reveal that items with pro-social labels on their packaging contributed a significantly higher proportion of units in the voting condition (than in the information condition). Allowing customers to vote on the next recipient of a charitable gift increased their purchases of pro-social items. The effect was strongest for the "Charitable or Ecological" and "Organic" pro-social labels.

We conducted a second study to evaluate the impact of voting on membership decisions. This field experiment was conducted over three weekends (6 days) in four New England stores of the same retailer that participated in Study 1. At the time of the study the retailer was conducting a promotional campaign encouraging new members to visit the store for a 2-month trial membership. When a prospective customer visits the store to enact a trial membership, the customer service representative asks the customer if they would like to upgrade to a full membership. The focus of this study is investigating whether prospective members are more likely to upgrade in the voting condition than in the information condition.

All membership enquiries are processed at a membership service desk at the front of the store. The treatments were implemented by positioning an assistant near this desk. The assistants intercepted customers as they approached the line. They then implemented the same voting and information treatments that were used in the first study. The three charitable organizations were different at each store and were local to each store. The total donation in this study was \$5,000 for each store, distributed as \$3,000 to the charity receiving the most votes, and \$1,000 to each of the other two charities.

In this second study, the treatments were rotated between successive customers. To match the treatments with the outcomes, the customers took their survey and voting forms (for those that voted) to the membership desk. After completing the transaction, the membership service representative then marked the form to indicate why the customer visited and the outcome of the transaction. The voting condition had a positive impact on the proportion of new members that chose upgraded memberships. In the information condition, 30.6% of the new members chose the regular or rewards membership. In the voting condition, 55.0% converted to the regular or rewards membership. This difference in the conversion rate (55.0% versus 30.6%) is statistically significant  $p < 0.01$ . It is also managerially important. Increasing the conversion rate by even a small percentage has the potential to create tremendous economic benefits for this retailer.

For more information contact: [gdonnelly@hbs.edu](mailto:gdonnelly@hbs.edu)

## ***One Being the "Tipping Point": Threshold Incentives Motivate Behavior***

Lalin Anik, University of Virginia, USA\*

Michael Norton, Harvard Business School, USA

We explore and document a new intervention to motivate behavior: being the *tipping point*, the person whose contribution passes a threshold that kicks in a higher reward for the self and others. Anik, Norton, and Ariely (2014) showed that offering incentives contingent on other people's behaviors is motivating: "If 75% of people engage in this behavior, we will increase the rewards for everyone." Across three studies, we explore whether specifically being the person who tips that incentive is particularly motivating: "We are currently at 74% and you will bring us up to 75%."

In Study 1, we asked participants to imagine a hypothetical scenario where a donation would be made to a local health charity for each person who got a blood test. Participants were randomly assigned to a 2 (condition: *tipping* vs. *control*) X 3 (level of progress: *low*, *medium*, *high*) design. We told those in the *tipping* conditions that [9, 49, 89] people have gotten a blood test so far, and the amount to be donated per participant was [25¢, \$1.27, \$6.41]. If they agreed to get a blood test, since they would be the [10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup>] person, each donation would increase to [37.5¢, \$1.90, \$9.61], respectively. If they decided not to get a blood test, the per-participant donation rate would stay at [25¢, \$1.27, \$6.41]. We told those in the *control* conditions that [10, 50, 90] people have gotten blood tests so far, and the amount donated per person was [37.5¢, \$1.90, \$9.61]. If they also got a blood test, they would be the [11<sup>th</sup>, 51<sup>st</sup>, 91<sup>st</sup>] person, and each donation would still be [37.5¢, \$1.90, \$9.61]. Next, participants indicated their likelihood of getting a blood test using a 7-point scale (1 = *not at all likely*, 7 = *definitely likely*).

A 2 (condition: *tipping*, *control*) X 3 (level of progress: *low*, *medium*, *high*) ANOVA revealed a significant main effect of condition,  $F(1, 286) = 17.41, p < .001$ . The main effect for level of progress and the condition X progress interaction were both marginally significant, all  $F_s > 2.52, p_s = .08$ . Participants in the *tipping* conditions indicated a significantly higher likelihood of getting a blood test ( $M = 5.37, SD = 1.81$ ) than those in the *control* conditions ( $M = 4.44, SD = 1.91$ ),  $t(290) = 4.30, p < .001$ , suggesting that overall being the *tipping point* was indeed more motivating. A closer analysis revealed that at *low* and *medium* progress levels, participants' likelihoods of getting a blood test were significantly higher when they were the *tipping point*, all  $t_s > 3.16$ , all  $p_s < .003$ . However, for *high* progress level, being the *tipping point* was not more motivating than the baseline,  $t(108) = .64, p = .53$ .

One reason tipping points are more motivating when they are earlier, rather than later, could be that large contingent monetary incentives might have "crowded out" motivation (Deci 1975; Lepper, Greene, & Nisbett 1973). Therefore, in Study 2, we pit the impact of being the *tipping point* against small, non-contingent monetary incentives. The scenario used was very similar to the one in Study 1.

Participants were randomly assigned to one of five conditions. The *tipping* condition informed participants that they could be the 10<sup>th</sup> person who tipped the donation from 50¢ to \$1 for everyone. Participants in the *non-tipping* condition were told that they could be the 10<sup>th</sup> person, and the donation would still be 50¢ per head. Finally, those in one of three *non-contingent incentives* conditions were not told about other's behavior, and were informed that [\$1, \$5.50 or \$10] would be donated to a charity on their behalf if they got a blood test. Participants indicated their likelihood of testing (1 = *yes*, 0 = *no*).

We replicated the effect that social incentives were more effective than nonsocial incentives ( $M = 75.47\%$  vs.  $58.67\%$ ),  $\chi^2(1) = 3.98, p < .05$ . Further contrasts revealed that percent of participants who agreed to getting a blood test in the *tipping* condition ( $M = 85.71\%$ ) differed from the *non-tipping* condition ( $M = 75.47\%$ ),  $\chi^2(1) = 3.36, p < .07$ , as well as from all three *non-contingent* conditions,  $\chi^2_s > 4.49, p_s < .04$ . Results show that being the *tipping point* in a social group is motivating above and beyond offering monetary incentives alone or providing only social information.



Finally, we ran a study (Study 3) with real consumer behavior where participants reviewed a restaurant experience in exchange for donations to a project that provided lunchbox to kids. There were three conditions: a *non-contingent incentives* condition offered a \$3 donation; a *tipping* condition grouped participants with two others, and by reviewing the restaurant, donations for all three participants would jump from 50¢ each to \$1 each (a total of \$1 donated in total if the participant didn't respond to \$3 total if they did); and finally, a *social no-tipping* condition, where the amount donated for each participant was \$1, \$3 in total for the charity. Using a 7-point scale (1 = *not at all*, 7 = *a great deal*), participants answered a series of questions about how much responsibility they experienced towards other participants and towards the kids who would receive the lunchboxes and their feelings of altruism, impact, substitutability and guilt in general. Our dependent variable was the percent of participants who provided a review.

Again, we found that setting incentives contingent on social behavior led to a significantly higher percent of reviews than offering non-social incentives, ( $M = 42.73\%$  vs.  $33.83\%$ ),  $\chi^2(1) = 2.13, p < .04$ . Further analysis showed that the effect of social incentives was driven by the *tipping* condition as it resulted in participation significantly higher than in *social no-tipping* condition ( $M = 50.00\%$  vs.  $35.71\%$ ),  $\chi^2(1) = 2.15, p < .04$ . Finally, a mediation analysis revealed that the effect of being the *tipping point* on participation was mediated only by participants' feelings of responsibility towards fellow participants, rather than feelings toward the recipient or general feelings of altruism, guilt, substitutability or impact.

For more information contact: [anikL@darden.virginia.edu](mailto:anikL@darden.virginia.edu)

### ***Avoiding Overhead Aversion in Charity***

Uri Gneezy, University of California San Diego, USA

Elizabeth Keenan, Harvard Business School, USA\*

Ayelet Gneezy, University of California San Diego, USA

How can charities use initial large donations to maximize contributions from other potential donors? Traditionally, charities have used these financial gifts to solicit additional donations by announcing the initial donation as “seed money,” or using it in a “matching model” in which the charity uses the initial funds to match every new dollar donated. We propose a third alternative—using the initial donation to cover a charity's overhead costs (i.e., administrative and fundraising costs), thereby allowing all subsequent donations to be overhead free, and go directly to the cause.

Donors tend to avoid charities that dedicate a high percentage of expenses to administrative and fundraising costs, limiting the ability of nonprofits to be effective. In this paper we test whether designating early large gifts to cover overhead costs increases donors' willingness to contribute to a charity. Charities are interested in maximizing the total funds raised and are agnostic about whose donations cover overhead costs. Consumers, however, seem to have clear, strong preferences—they want to have *their* donations be put to “good” use—programming.

We begin our empirical investigation with a laboratory experiment in order to: 1) provide empirical support for our assertion that an increase in overhead costs associated with a donation decreases giving, 2) to gain insight into what drives overhead aversion, and 3) to test our proposed solution in a controlled environment.

In a between-participants design, we randomly assigned 449 participants to one of five treatments. All participants were presented with short descriptions of two charities: *Kids Korps USA* and *charity: water*. In all five treatments, we asked participants to decide which of the two charities should receive a \$100 donation. Participants were told that there was no overhead associated with donations made to

Kids Korps. For charity: water, we manipulated two aspects of the overhead associated with donations. First, we varied the overhead level associated with participants' donations to charity: water. In treatment 1, there was no overhead, in treatment 2 the overhead associated with the donation was 5% (i.e., we sent \$95 to charity: water if participants chose it), and in treatment 3 the overhead was 50%. Our dependent measure was the proportion of donations given to charity: water.

The results of the first three treatments support our assertion regarding overhead aversion. The majority of participants in the “no overhead” treatment (73.33%) donated to charity: water. This proportion decreased to 66.67% in the “5% overhead” treatment, though not significantly using a test of proportion ( $z=0.98$ ;  $P=.33$ ). When overhead costs were 50%, only 49.43% of participants chose to donate to charity: water, which is significantly lower than the proportions observed in the no overhead ( $z=3.27$ ;  $P<.01$ ) and 5% overhead ( $z=2.32$ ;  $P=.02$ ) treatments.

We can think of two main reasons for donors' overhead aversion: 1) high overhead might imply that an organization is inefficient, or even corrupt or 2) individuals might feel they made a greater impact when they know they are helping the cause directly than when their contribution pays the salary of a charity's staff member, which is consistent with the theory of impact philanthropy (Duncan, 2004).

Treatments 4 and 5 were similar to treatments 2 and 3, respectively, with one important difference: in addition to providing overhead information, we informed participants that “someone else already covered this cost for your contribution, so for every dollar you'll donate the entire \$1 will go to “charity: water.” If overhead is used as a signal of efficiency, then we should not observe a difference in overhead aversion between treatments 2 and 4 or treatments 3 and 5, as the quality of this signal is the same. If, however, the observed overhead aversion is driven by a decrease in the perceived impact the donor experiences with respect to her donation, then the proportion of individuals choosing to donate to charity: water in treatments 4 and 5 would be similar to that observed in the no overhead treatment (Treatment 1).

The results reject the efficiency explanation, and are in line with the personal impact explanation. In treatment 5, at 50% covered overhead, 71.43% of participants donated to charity: water, which is not different than donations in treatment 1 (no overhead,  $z=0.29$ ;  $P=.77$ ) and is significantly higher than those in treatment 3 (50% uncovered overhead,  $z=3.00$ ;  $P<.01$ ).

Next, in order to test the effect of an “overhead-free” donation opportunity on actual donations, we conducted a large field experiment with a foundation that specializes in education. The foundation purchased the right to send a one-time donation request letter to 40,000 potential US donors who donated to similar causes in the preceding five years. Participants were randomly assigned to one of four treatments: Control (a standard request for support), Seed (included additional information about an initial large donation having already been received), Match (included additional information about an initial large donation that was being used to match donations 1:1), and Overhead (included additional information about an initial large donation being used to cover all overhead costs). Participants were asked to give \$20, \$50, or \$100.

Overall, the campaign raised \$8,040 through the Control treatment ( $M = \$0.80$  per solicitation). The amount raised in the Seed treatment was 64% higher than the Control treatment—\$13,220 ( $M = \$1.32$  per solicitation). An intention-to-treat analysis revealed this difference was significant ( $t(19998)=5.89$ ,  $P<.001$ ). The amount collected in the Match treatment was \$12,210—52% more than in the Control treatment ( $t(19998)=4.85$ ,  $P<.001$ ;  $M = \$1.22$ ,  $SD = 7.12$  per solicitation). This amount was not significantly different from the amount collected in the Seed treatment ( $t(19998)=.99$ ,  $P=.32$ ). Finally, the foundation raised \$23,120 ( $M = \$2.31$  per solicitation) in the Overhead treatment—a significant increase relative to the Control (188%;  $t(19998)=14.29$ ,  $P<.001$ ), Seed (75%;  $t(19998) = 8.30$ ,  $P<.001$ ), and Match (89%;  $t(19998)=9.26$ ,  $P<.001$ ) treatments.

While it is important to educate donors about the importance of overhead costs and how they can be used to improve the effectiveness of charities, the method of an “overhead-free” donation appears to simultaneously address individuals’ concerns about overhead and increase overall giving.

For more information contact: ekeenan@hbs.edu

***When is it Better to Give or Receive? Kindness, Happiness, and Reciprocity in the Chain of Giving***

Minah Jung, New York University, USA\*

Silva Kurtisa, Georgetown University, USA

Leif Nelson, University of California Berkeley, USA

People are kinder when paying for someone else than for themselves (Jung, Nelson, Gneezy, & Gneezy, 2014). This behavior is at least partially guided by people’s inaccurate perceptions of others’ behavior; something about pay-it-forward seems to lead people to infer the appropriate social norm to be kinder. What about pay-it-forward enforces such a norm? Pay-it-forward has two quite different features: receiving versus giving a gift. Which one is the most powerful influence on behavior? In three studies we investigate the underlying mechanism behind paying-it-forward by disentangling the social forces of reciprocation and generosity.

Grant and Dutton (2012) found that people are kinder when they reflected on giving benefits to others than receiving because giving enforces a prosocial identity as a caring a capable person, while receiving makes people to feel indebted and incompetent. In Study 1, we tested this argument in the pay-it-forward (PIF) framework by manipulating the salience of the giving versus receiving feature of PIF at a local restaurant. All diners ( $N = 94$ ) were informed that their meals had been paid for by another customer and they could pay-it-forward to another customer. At the end of their meal, each group of diners received their check with a card with our salience manipulation. Customers paid more when their card emphasized that they could pay for someone else than when it emphasized that someone had paid for them,  $M_s = \$20.42$  versus  $\$11.09$ ).

These results suggest that generosity might be a stronger force than reciprocation. Study 2 further examined how these forces operated in the presence or absence of direct social pressure. In Study 2, we conducted our experiment at an art museum using the same salience manipulation as in Study 1. But this time museum visitors ( $N = 836$ ) paid either anonymously or directly to the receptionist. In the giving condition, visitors paid a similar amount whether they were paying anonymously or directly, ( $M_s = \$3.08$  versus  $\$3.27$ ), but in the receiving condition people paid significantly more when paying directly than anonymously, ( $M_s = \$3.76$  versus  $\$2.37$ ).

If people were kinder when reminded of giving than reminded of receiving, does giving make people feel happier than receiving? In Study 3, we examined whether or not people’s levels of generosity hinged on how happy they felt about giving an act of kindness and their prediction on the recipients’ happiness. In this study we collaborated with the Social Coin, a company that provides its clients a customizable online platform to foster and track acts of kindness across generations of participants in a pay-it-forward chain. The Social Coin mints its own coins that allow users to track their coin as it changes hands when s/he completes an act of kindness to another person. Participants ( $N = 300$ ) were randomly assigned to one of two implicit reference points for kind acts; they were encouraged to complete either a small (e.g., make/buy a cup of coffee) or a large act of kindness (e.g., make/buy dinner) for someone. Before and after paying-forward kind acts, they reported forecasted and experienced happiness of others and themselves on our customized social coin website.

Givers of a kind act were happier when they completed a small act of kindness than a large one ( $M_s = 5.69$  versus  $5.88$ ) but recipients were equally happy regardless of the size of the kind act ( $M_s = 6.37$  versus  $6.34$ ). Givers and recipients of a kind act displayed asymmetric beliefs about others' happiness. Recipients were happier than givers predicted them to be, ( $M_s = 6.54$  versus  $6.17$ ) and givers were less happy than recipients predicted them to be ( $M_s = 5.69$  versus  $6.28$ ). These results suggest that the power of giving might come from givers' underestimation of how positive recipients view the givers' kind act.

For more information contact: [minah.jung@stern.nyu.edu](mailto:minah.jung@stern.nyu.edu)

## ***Individual Papers: Selected Topics of Consumer Psychology***

### ***Emergency Reserves-The Benefits of Providing Slack with a Cost***

Marissa Sharif, UCLA Anderson School of Management, USA\*

Suzanne Shu, UCLA Anderson School of Management, USA

In this research, we propose that including emergency reserve within a goal will improve performance by both 1) increasing motivation and 2) persistence after failure. We define an emergency reserve as pre-defined extra slack around a goal that can be used if needed but at a small cost. In this research, we compare Reserve goals to Hard Reference Point goals and Easy Reference Point goals. Reserve goals have a difficult reference point plus an additional emergency reserve (e.g., 1500 calories per day + 700 optional weekly "emergency" calories). Hard Reference point (Hard RP) goals have the same difficult reference point without the additional reserve. Easy Reference point (Easy RP) goals have an easier reference point with the reserve already incorporated into their goal (e.g., 1600 calories).

Since the reserve imposes a small cost, we hypothesize that people will try to treat the goal without the reserve as their primary reference point, keeping the reserve mentally separated from the goal. Prior research has suggested that people are sensitive even to psychological costs (Soman & Cheema, 2011; Thaler & Shefrin, 1981). Therefore, Reserve participants will try to reach a more difficult reference point compared to an Easy RP goal and this will ultimately lead to better performance (Heath, Larrick, & Wu, 1999; Locke, Shaw, Saari, & Latham, 1981).

In Study 1, 217 participants were randomly assigned a time goal to type a series of CAPTCHAs. Participants' goals were to finish the task within 210 seconds in the Easy RP condition, within 210 second but aim to complete the task within 180 seconds in the Aim Condition (general flexibility goal), within 180 seconds with an additional 30 seconds of "emergency time" in the Reserve condition, and within 180 seconds in the Hard RP condition. Participants in the Reserve condition typed CAPTCHAs significantly faster than Easy RP participants,  $p < .05$ , while Constrained Aim participants and Hard RP participants did not.

In Study 2, 226 participants were randomly assigned a goal specifying how many days they need to complete a CAPTCHA task throughout a week. In addition to receiving one-dollar daily for completing the task, participants received a five-dollar bonus if they completed their goal. Participants' goals were to complete the task five days out of the week in the Easy RP condition, five days but aim to complete the task every day in the Aim condition, and every day in the Hard RP condition and Reserve condition. However, Reserve participants were also told up to two missed days would be excused if they needed it and that they would still receive their bonus but not the daily payment for the missed days. Reserve participants were significantly more likely to receive their bonus than Easy RP Participants,  $p < .01$ , Constrained Aim Participants,  $p < .05$ , and Hard RP participants,  $p < .001$ . Reserve participants were also more likely to complete the "easier" goal (five days a week) than the Hard RP participants,  $p < .05$ . Participants who failed their goal in the Hard RP condition completed the task fewer days than those who failed with reserves,  $p = .07$ . This study suggests that participants with

reserves may perform better than those with Hard RP goals if the task involves persistence over time. Many individuals are likely to fail at least once throughout long-term goal pursuit. Prior research has revealed that failure to meet a goal can lead to a deterioration in subsequent performance (Polivy, 1976; Soman & Cheema, 2004). The reserve may be able to inhibit the negative effects of goal violation by offsetting the negative emotions associated with a failure.

Lastly, in Study 3, 597 participants were asked to complete three word searches within a specified amount of time. They were assigned randomly to Easy RP [*Beat 2 word searches*], Hard RP [*Beat 3*], High-Low [*Beat 2 or 3*], or Reserve [*Beat 3, with one emergency point if you fail*] goals. After completing an easy word search, participants were randomly assigned to a condition in which they were likely to either fail the second word search (Fail Condition) or succeed at the second word search (Success Condition). After failing or succeeding, they were able to choose to try the third word search or move on to the next part (our measure of persistence). Participants had to successfully complete their goal in order to try to qualify for a future survey.

We found that participants with Reserves were more likely to persist compared to those with Easy RP goals,  $p = .002$ , and High-Low goals,  $p = .045$  in both conditions. After reaching the easier reference point, participants in the High-Low and Easy RP conditions are satisfied and do not try to complete the third word search, but Reserve participants persist. This suggests that participants in the Reserve condition are adhering to the more difficult reference point (scoring 3 points) more than those in the High-Low and Easy RP conditions. Additionally, Reserve participants are more likely to persist in the face of a sub-goal failure. The Reserve thus may also decrease the psychological impact of a sub-goal failure.

We also found a 2 (Failure vs. Success) x 2 (Reserve vs. Hard RP goal) interaction predicting persistence,  $p < .001$ . In the Failure condition only, participants were significantly more likely to persist after failing in the Reserve condition compared to the Hard RP condition,  $p < .001$ . Additionally, within the failure condition, we found a negative and significant mean indirect effect of Hard RP goals compared to Reserve goals on persistence through the serial mediators of satisfaction and determination ( $a_1 \times d_{21} \times b_2 = -.08$ ), with a 95% confidence interval excluding zero (-.19 to -.023). After failing the second word search, participants in the Hard RP condition felt less satisfied and determined and thus abandoned their goal, consistent with goal violation literature. However, participants in the Reserve condition continue to persist even in the face of the failure.

For more information contact: [marissa.sharif.1@anderson.ucla.edu](mailto:marissa.sharif.1@anderson.ucla.edu)

### ***Silver Spoons and Platinum Plans: How Childhood Environments Affect Adult Healthcare Decisions***

Chiraag Mittal, University of Minnesota, USA\*

Vladas Griskevicius, University of Minnesota, USA

Despite recent efforts, why do millions of people still have no health insurance and millions more remain severely underinsured? One contributing reason is that some people might not be able to afford health insurance. Yet studies show that health insurance policies are affordable to a large proportion of the uninsured (Bundorf and Pauly 2006). This suggests that lack of money alone does not fully explain why millions of people choose to forego health insurance.

Accordingly, considerable research has examined factors that influence insurance decisions (for a review, see Kunreuther and Pauly 2006). In this research, we propose that people's health insurance decisions are influenced by an unlikely factor—their childhood socioeconomic status (SES). Furthermore, we propose that the effects of childhood SES on healthcare decisions are different depending on whether they are driven by people's risk-taking propensity or their risk perception.

We predict that, in general, people from wealthier (vs. poorer) households would desire more insurance. This effect would be especially observed under conditions of financial threat and would be mediated by differences in risk-taking propensity between people from different childhood backgrounds (Studies 1 and 2). These predictions are derived from recent work showing that growing up in low-SES (vs. high-SES) environments is associated with greater (lower) risk-taking especially in response to financial threats (Griskevicius et al. 2011, 2013).

However, we also propose that the interactive effect of childhood SES and financial threat on desire for health insurance can be reversed (Studies 3 and 4). This would happen when people are first provided with base rate information (e.g. 5%) associated with a health risk. We propose that when such base rates are salient, people from low (high) SES backgrounds would desire *more* (less) health insurance because of overestimating (underestimating) their own risk. We base this prediction on recent work showing that people from low (high) SES backgrounds feel a low (high) sense of control in response to financial threats (Mittal and Griskevicius 2014). And because low (high) sense of control is associated with pessimistic (optimistic) expectations (Klein and Helweg-Larsen 2002), we reason that controllability would affect people's judgments of being affected by a health risk (risk perception) consequently influencing desire for insurance.

We conducted four experiments to test our predictions. In Study 1, participants were randomly assigned to either a control or a financial threat condition. In the financial threat condition, people wrote about three things that indicate that the economy is becoming unpredictable and resources are becoming scarcer. Those in the control condition wrote about things that indicate that the economy is stable. Next, participants imagined that they currently didn't have health coverage and indicated the likelihood that they would purchase coverage in the near future. Finally, participants' childhood and current SES was assessed using established measures. Results revealed no difference in desire for insurance in the control condition. However, in the financial threat condition, people from wealthier backgrounds indicated a *higher* willingness to buy insurance as compared to those from poorer backgrounds ( $F(1, 136) = 4.45, p = .037$ ). This interaction effect remained even after controlling for current resources.

Study 2 sought to conceptually replicate this effect and test the mediator—people's risk-taking propensity. After being assigned to either a control or a financial threat condition, participants indicated their maximum willingness to pay (WTP) for health insurance. They also indicated their willingness to take risks which served as our mediator (Blais and Weber 2006). Replicating Study 1, results revealed that people from wealthier (poorer) backgrounds indicated a higher (lower) WTP for health insurance in the financial threat condition ( $F(1, 116) = 14.44, p < .001$ ). A similar interaction effect was observed for risk propensity showing that financial threat led people from poorer (wealthier) backgrounds to increase (decrease) their risk-taking behavior. Finally, mediation analyses confirmed that the effect of childhood resources and financial threat on WTP for health insurance was mediated by risk-taking propensity.

Study 3 examined whether making base rates salient reverses the pattern of results. Participants were again assigned to either a control or a financial threat condition. They were next told that the chances of getting a disease for the general public is 5% (the base rate), and were asked to indicate their likelihood of buying insurance against it. As expected, results revealed that making base rate salient led people from poorer (wealthier) backgrounds to have *greater* (lower) desire for insurance in the financial threat condition ( $F(1, 96) = 8.16, p = .005$ ).

Study 4 sought to replicate this effect and test for the underlying mechanism. The study design was identical to Study 3. After the manipulation, everyone saw the base rate and indicated their likelihood of buying health insurance as well as their perception of being affected by the disease (proposed mediator). Results once again revealed that making base rate salient led people from poorer (wealthier) backgrounds to have greater (lower) desire for insurance in the financial threat condition ( $F(1, 121) = 11.16, p = .001$ ). Furthermore, as predicted, people from poorer (wealthier) backgrounds overestimated (underestimated) their likelihood of getting affected by the disease

( $F(1, 121) = 20.8, p < .001$ ). Finally, mediation analysis revealed that risk perception mediated the effect of childhood SES and financial threat on desire for insurance when base rate information was salient.

Taken together, our work makes several contributions to the consumer behavior literature. First, we show that childhood environments can impact people's healthcare decisions independent of their current affordability. Second, we provide mediational evidence showing that childhood SES influences healthcare decisions via two different psychological mechanisms – risk-taking propensity and risk perception. Third, the current studies are the first to show that childhood SES can influence health risk perceptions. Finally, whereas low childhood SES is often associated with poor decision-making, we find that making base rate salient led people who grew up poor to be more motivated to seek health coverage. In sum, this work has important implications for a broad audience, including researchers interested in healthcare decisions, financial threats and scarcity, childhood environments, and public policy.

For more information contact: [mitt0172@umn.edu](mailto:mitt0172@umn.edu)

### ***The Rating Polarity Effect: Overcoming the Surreptitious Influence of Implicit Numerical Associations on Consumer Judgments***

Ellie Kyung, Dartmouth College, USA\*

Manoj Thomas, Cornell University, USA

Aradhna Krishna, University of Michigan, USA

People often use numeric ratings to evaluate things that they encounter in life, e.g., products, job candidates, research proposals. Numeric ratings can be presented using a rating format where larger numbers indicate that something is better ( $1=bad, 5=good$ ) or with reversed rating poles where smaller numbers indicate that something is better ( $1=good, 5=bad$ ). How might a difference in rating polarity influence people's judgments? When asked this question in a pretest, 79% of participants believed that a difference in format would not affect their evaluations. In this research, we argue that this belief is misplaced because people underestimate the strength of the implicit numerical association they have in memory—an association that leads to proactive interference that influences their judgments such that their evaluations are less responsive to numeric differences in quality when evaluating products with a quality rating format that uses a numerical association opposite the one they hold in implicit memory. We refer to this as the *rating polarity effect* and contribute to the literature on proactive interference (Burke and Srull 1988; Jonides and Nee 2006; Keller 1987; Keppel and Underwood 1962; Wickens, Born, and Allen 1963) by identifying this new form of proactive interference for numerical associations and demonstrating the role that implicit memory plays in this persistent interference effect.

As described by Jacoby (1991), measuring the extent of interference between implicit associations and explicit rules requires comparing outcomes where the implicit association and explicit rule are consistent versus when they are inconsistent. In all of our experiments, we compare two conditions—one where the numerical association of the rating format and the numerical association in implicit memory are consistent (*consistent* rating polarity condition), and another condition where the numerical association of the rating format and the numerical association in implicit memory are inconsistent (*inconsistent* rating polarity condition). If there is no interference between the implicit numerical association in memory and the numerical association used in the rating format, then judgments in the consistent and inconsistent rating polarity conditions should be identical. However, if the judgments and decisions vary across the two conditions, then this is evidence for interference, and the difference in evaluations between participants in the consistent versus inconsistent rating polarity conditions reflects the extent of interference (Jacoby 1991).

The first three experiments demonstrate the robustness of the rating polarity effect. In the context of a first-bid auction, experiment 1a demonstrates that the rating polarity effect manifests such that those participants that evaluated a high quality mug using

smaller-is-better (inconsistent) rating polarity bid less on it than those that used bigger-is-better (consistent) rating polarity ( $M_{inconsistent} = \$2.70$ ,  $M_{consistent} = \$4.42$ ,  $F(1, 70) = 4.80$ ,  $p = .03$ ), even though the numerical ratings were conceptually equivalent. Experiment 1b demonstrates that the rating polarity effect can influence visual perception by examining the difference in how low versus high quality products are evaluated depending on the polarity of the rating format. In the consistent rating polarity condition, participants saw the high quality product as demonstrating significantly greater improvement in the before and after photographs ( $M_{high} = 78.3$ ) than the low quality product ( $M_{low} = 68.8$ ,  $F(1, 165) = 7.48$ ,  $p < .01$ ). However, in the inconsistent rating polarity conditions (smaller-is-better), the effect of quality rating is eliminated ( $M_{high} = 72.8$  versus  $M_{low} = 73.1$ ,  $F(1, 165) = .007$ ,  $p = .93$ ). Experiment 1c shows that this rating polarity effect persists even when making repeated decisions for 15 products of varying quality levels. Repeated measures regressions revealed a significant rating polarity x product quality interaction for both purchase intent ( $\beta = -.36$ ,  $p < .01$ ) and willingness-to-pay measures ( $\beta = -.25$ ,  $p < .01$ ), indicating the presence of interference. The direction and size of the coefficients suggests that participants' evaluations were less sensitive to numeric differences in quality ratings when using rating polarity with a numeric association inconsistent with the implicit numerical association they have in memory.

We posit that this effect persists because people cannot easily overcome the spontaneous interference the stems from implicit numerical associations in memory and demonstrate the underlying role of implicit memory by showing that the cultural variation for implicit numerical associations, mindsets that vary propensity to rely on implicit v. explicit memory, and direct measures of propensity to rely on implicit memory can moderate this effect.

Experiment 2 demonstrates the cultural variability of the effect with Germany participants, who have a smaller-is-better numerical association in implicit memory. Repeated measures regression revealed a significant rating polarity x product quality interaction for both purchase intent ( $\beta = -.39$ ,  $p < .01$ ) and willingness-to-pay measures ( $\beta = -.04$ ,  $p = .06$ ), indicating the presence of interference, and that German participants' evaluations were less sensitive to difference in numeric ratings when using a bigger-is-better numerical association.

Experiments 3a (manipulated) and 3b (measured) show that the rating polarity effect is attenuated by a mindset that encourages reliance on implicit memory (Fukakara, Ferguson, and Fujita 2013; Smith and Trope 2006; Rim, Uleman, and Trope 2009). Significant 3-way interactions both experiments (3a:  $\beta = -.20$ ,  $p < .01$ ; 3b:  $\beta = -.02$ ,  $p = .01$ ) and follow-up contrasts indicate that the rating polarity effect is attenuated for those participants in a more concrete mindset, that rely less on implicit memory.

Using individual difference measures of implicit and explicit memory, the final experiment demonstrates that the individual difference measure of implicit memory moderates the rating polarity effect ( $\beta = -.01$ ,  $p = .05$ ) but the individual difference measure for explicit memory does not ( $\beta = .002$ ,  $p = .59$ ).

Together these studies suggest that the rating polarity effect stems from spontaneous interference from the implicit numerical association in memory when using a rating system with opposite rating polarity. Our results have important implications not only for theory but also for survey interface design and the presentation of summary statistics used to inform decision-making.

For more information contact: [ellie.kyung@tuck.dartmouth.edu](mailto:ellie.kyung@tuck.dartmouth.edu)

### ***Consumer Reactions to Brand Arrogance***

Nira Munichor, Hebrew University of Jerusalem, Israel\*

Yael Steinhart, Tel Aviv University, Israel



Consumers love brands, and marketers in turn invest a great deal of effort in making their brands appealing and powerful. One approach that marketers use to enhance brand image is the communication of arrogance—i.e., a display of superiority, accomplished by disparaging others (Brown, 2012; Johnson et al., 2010). One example is the slogan of Arrogant Bastard Ale: “Hated by many. Loved by few. You’re not worthy.”

Presumably, marketers adopt an arrogant image for a brand because arrogance conveys positive connotations, such as heightened quality and status, which appeal to consumers (Tiedens et al., 2000). However, arrogance may also induce feelings of inferiority (Tiberius & Walker, 1998). In light of this duality, we propose that in some cases consumers may decide to avoid arrogant brands even when they perceive those brands as high in quality and status. Specifically, we identify prior self-threat as a factor that may encourage consumers to avoid arrogant brands. We suggest that consumers with a priori unfavorable self-perceptions—that is, consumers who feel weak, powerless, or low in self-worth—will be less able than consumers with more positive self-perceptions to tolerate the psychological threat (i.e., the feeling of inferiority) induced by brand arrogance, and will therefore be more motivated to protect themselves from that threat. Consequently, consumers with unfavorable self-perceptions (i.e., consumers whose self is a priori threatened) will be more likely to decide to avoid the arrogant brand.

We further suggest that the decision to avoid an arrogant brand may reflect not only passive, protective behavior (i.e., a withdrawal in the face of a psychological threat), but also an active means of restoring self-worth, via an expression of self-determination and free will (Deci & Ryan, 1985; Fitzsimons, 2000; Inesi et al., 2011). Accordingly, we posit that arrogant brand avoidance may function as a means of rebuilding consumers’ self-perceptions.

Studies 1a through 1c aimed to establish the hypothesized basic effect of prior self-threat on the decision to avoid (versus select) arrogant brands. These studies therefore manipulated participants’ self-threat (present vs. absent), and then asked participants to choose between an arrogant brand and a competing less-arrogant brand. Study 1a, which involved a self-expressive product (of a fictitious fashion brand), confirmed that self-threatened (vs. non-threatened) participants were less likely to select an arrogant brand (37% vs. 64%,  $\chi^2(1)=4.20$ ,  $p<.05$ ). Study 1b replicated these results using a utilitarian product (of a fictitious cleaning-wipes brand): Self-threatened participants, compared with non-threatened participants, were less likely to choose (50% vs. 83%,  $\chi^2(1)=5.73$ ,  $p<.05$ ) and wanted to purchase fewer packs of the arrogant brand (1.12 vs. 2.87,  $t(47)$ ,  $p<.05$ ). Study 1c showed that prior self-threat (vs. absence of threat) decreases arrogant brand selection even when decisions involve real (beer) brands and actual choices (42.3% vs. 80%, respectively,  $\chi^2(1)=6.62$   $p<.05$ ).

Study 2 was designed to confirm that the effect observed in studies 1a through 1c can be attributed to brand arrogance rather than to other brand features. To that end, in Study 2 we manipulated both participants’ self-threat (present vs. absent) and the slogan of the focal brand (arrogant vs. non-arrogant) while controlling for other brand and product features. Then, we asked participants to choose between the focal brand (which was either arrogant or not) and an alternative neutral-image brand. Self-threatened participants were less likely to choose the focal brand over the alternative when the focal brand was arrogant (37.5%) than when it was not arrogant (84.4%,  $\chi^2(1)=9.58$ ,  $p<.01$ ). Conversely, arrogance did not affect the choices of non-threatened participants ( $p>.4$ ; interaction:  $\chi^2(1)=2.85$ ,  $p=.09$ ).

Study 3 examined the underlying process that drives the tendency of self-threatened participants to avoid arrogant brands. We predicted that a priori self-threatened (vs. non-threatened) consumers would be more likely to feel inferior in the presence of arrogant brands, and that this sense of inferiority would influence their tendency to avoid the arrogant brands. After a self-threat manipulation, participants chose between an arrogant brand and a less-arrogant alternative brand, and also rated their sense of inferiority. Arrogant-brand selection was lower among self-threatened participants (52.9%) than among non-threatened participants (76.5%,  $\chi^2(1)=4.12$ ,  $p<.05$ ), and sense of

inferiority mediated this effect (CI 95%: -.833 to -.003). Study 3 also showed that arrogant brand avoidance helps restore favorable self-perceptions: Self-threatened participants reported more positive self-perceptions following arrogant-brand avoidance ( $M=3.88$ ) than following arrogant-brand selection ( $M=3.44$ ,  $t(66)=2.08$ ,  $p<.05$ ). In contrast, the self-perceptions of non-threatened participants did not depend on their choice ( $p>.1$ ).

Study 4 explored a possible contingency for our effect: If it is true that consumers avoid arrogant brands when they feel a need to protect their self from further harm, then those whose self-perceptions have been boosted prior to brand exposure should be less motivated to protect their self, and therefore less likely to avoid arrogant brands. Study 4 indeed demonstrated that when self-perceptions receive a boost prior to brand exposure, avoidance of arrogant brands declines. After a self-threat manipulation, we changed participants' relative height perceptions to manipulate whether or not their self-perceptions were enhanced (Duguid & Goncalo, 2012). Participants then chose between an arrogant brand and a competing less-arrogant brand. Self-threatened participants whose self-perceptions had been bolstered by a sense of tallness were more likely to choose the arrogant option than participants who felt relatively short (77.5% vs. 37.9%,  $\chi^2(1)=3.21$ ,  $p<.01$ ). However, perceived relative height had no effect on non-threatened participants' choices ( $\chi^2(1)=0.12$ ,  $p>.9$ ; interaction:  $\chi^2(1)=2.75$ ,  $p<.05$ ).

Taken together, the current findings contribute to our understanding of how consumers react to brand communications that convey an image of arrogance, and illustrate the key role that self-threat plays in these reactions. Our findings may have important implications for consumers, by making them more aware of the influences that a brand's image may exert on their behavior and wellbeing; and for marketers, by suggesting that while adopting an arrogant image may attract some customers, it is likely to repel others, and so the decision to employ arrogance as a marketing tool should be taken with caution.

For more information contact: [niram@huji.ac.il](mailto:niram@huji.ac.il)

## ***Individual Papers: Identity and Consumption***

### ***Keepin' it Cool with Sunglasses: Examining How and When Cool Products Make for Cool Consumers***

Amy Dalton, Hong Kong University of Science and Technology\*

Lili Wang, Zhejiang

The question of how cool becomes active in directing thought and action has received little theoretical analysis and empirical attention. Of particular importance from a consumer psychology perspective is the role of consumption and marketing in activating cool. As noted by Belk et al., "Consumers now look for cool in the marketplace more than within themselves" (2010; pg 183), making consumption increasingly instrumental for creating and reinforcing coolness. Critical to understanding what drives cool, then, is identifying which aspects of our day-to-day consumer experiences mentally activate cool and affect how people think and act with respect to coolness. We posit that using a symbolically cool product may activate cool, thus making the source of activation a consumer's own actions. We rely on sunglasses to study this issue.

Study 1 surveyed consumers regarding the behaviors and products they consider cool. The survey moved from open- to close-ended questions (to minimize demand effects) and included a wide range of traits/behaviors (to allow for comparative hypothesis testing). We found that sunglasses were the most commonly listed "cool product" and were rated cooler than other fashion accessories and garments (e.g., scarves and jeans). In terms of cool behaviors, factor analysis established two dimensions: emotional composure (e.g., calmness

under pressure) and nonconformity (e.g., slacking at school). These findings prompted us subsequently to manipulate cool activation using sunglasses, and to measure cool activation using emotional composure and academic underachievement.

Our first experiment, however, tested whether consumers wearing sunglasses (under the guise of a product evaluation task) pay more attention to people and brands that are cool over those that are neutral with respect to coolness. This study provides a strong test of cool activation because attention is less controllable than behavior, and because attention to cool stimuli is less subject to alternative explanations than behavioral measures. Attentional bias was examined in a dot probe task (MacLeod et al. 1986), which presents pairs of images simultaneously on a computer monitor. After the images disappear, a dot appears in place of one of the images and participants indicate whether the dot is on the right or left. If participants attend more to one image over the other, they will be faster to detect the dot when the dot replaces that image. Thus, response times should be faster when the dot replaces a cool image (e.g., Johnny Depp or Harley-Davidson) versus a neutral image (e.g., Mickey Mouse or Volvo). The results confirmed that people wearing sunglasses exhibited a greater attention bias to cool images compared to people in a control condition, for whom the sunglasses were visible on the desk but were not worn during the task ( $F(170) = 3.89, p = .05$ ; note: Satterthwaite adjusted df). In addition, people wearing sunglasses exhibited a greater attentional bias on trials where cool images were present compared to control trials where cool images were absent ( $F(95) = 3.28, p = .07$ ). These findings suggest that wearing sunglasses guides attention toward perceptual input that is cool.

Study 3 tested whether consumers wearing sunglasses underperform academically and exhibit emotional composure, hallmarks of cool behavior. Again under the guise of product evaluation, half were instructed to wear sunglasses throughout the study and half simply saw the sunglasses on their desk. Participants completed an “English language ability test” in which they received 5 minutes to generate as many words as possible from a set of scrambled letters (Dewall et al. 2011). Next, they were randomly assigned to receive positive or negative performance feedback and subsequently completed measures of shame, guilt and pride (Tangney and Dearing 2002). Compared to control participants, those who wore sunglasses performed worse on the test ( $t(99) = -1.96, p = .05$ ), consistent with the notion that cool kids reject achievement norms and slack at school. They also maintained their composure, expressing less intense feelings of shame ( $F(1, 97) = 8.92, p < .004$ ), guilt ( $F(1, 97) = 6.64, p = .01$ ), and pride ( $F(1, 97) = 25.10, p < .001$ ) in response to performance-related feedback. Importantly, performance did not predict emotions; rather, and as predicted, wearing sunglasses produced two independent effects: academic underperformance and emotional composure.

Study 4 tested whether these behavioral effects depend on the perception that sunglasses are cool. Participants were randomly assigned to sunglasses or control conditions before viewing a web-blog and advertisement that portrayed sunglasses either as cool or healthy (i.e., for UV-protection). Next, they completed a so-called filler task, a math matrices task (Gino et al. 2010), before answering questions about the website. Performance on the filler task was our dependent variable. As predicted, fewer matrices were solved in the sunglasses condition than the control condition but only when sunglasses were portrayed as cool ( $F(1, 162) = 10.76, p = .001$ ) and not healthy ( $F < 1$ ). Thus, as predicted, sunglasses’ symbolic meaning is critical to obtaining effects on cool behavior. Moreover, because wearing sunglasses did not affect performance in the healthy condition, we rule out the possibility that sunglasses impair performance through cognitive load or distraction.

Study 5 teased apart three competing underlying mechanisms – stereotype/construct activation, implicit self-perceptions, and explicit self-perceptions – by testing moderation by self-awareness and mediation by self-perceptions. Participants were assigned to the sunglasses or control condition. Self-awareness was manipulated in a “me/not me” self-description task (Markus 1977) in which participants indicated whether a series of personality and behavioral traits describes them (“me”) or not (“not me”). The low self-awareness condition was instructed to respond to items quickly, while the high self-awareness condition was instructed to respond accurately. Thus, self-perception was based on accessibility (introspection) in the low (high) self-awareness condition. All accounts make similar predictions under low self-awareness, predicting cool traits are more accessible in the sunglasses (vs. control) condition. Critically, predictions vary under high self-awareness. The explicit self-view account predicts that people wearing sunglasses continue

to perceive cool traits as self-descriptive and to underperform academically. That is, a process whereby people consciously infer they possess cool traits and thus behave cooler would not be weakened by self-awareness (Bem 1972). Conversely, the two accessibility-based accounts predict that high self-awareness attenuates the effect of wearing (vs. not wearing) sunglasses, consistent with the notion that self-awareness undermines accessibility effects (Wheeler et al. 2008). The accessibility-based accounts can, however, be teased apart. Stereotype/construct activation implies a direct effect but implicit self-perception is indirect, with self-perception mediating behavior. Our findings supported the implicit self-perception account: people wearing sunglasses automatically internalize self-perceptions associated with coolness, and this drives cool behavior.

Study 6 examined whether imagining oneself wearing the product, as one might do when shopping online, would yield similar effects as wearing sunglasses. Building on enclined cognition theory (Adam and Galinsky 2012), we predicted that physical engagement with a product is necessary for a consumer to integrate a product's identity-related qualities into the self. Therefore, mere imagination of oneself wearing sunglasses should not cause cool behaviors. Our results supported this argument.

For more information contact: amy.dalton@ust.hk

***It's Not Manly Being Green: The Role of Gender Identity Maintenance in Men's Avoidance of Environmentally-Friendly Behavior***

Aaron Brough, Utah State University, USA\*

Mathew Isaac, Seattle University, USA

James Wilkie, University of Notre Dame, USA

David Gal, University of Illinois at Chicago, USA

Jingjing Ma, Peking University, China

Prior research examining gender differences in environmentalism has typically found that women are more likely than men to be eco-friendly in their attitudes, intentions and behaviors (Carlsson-Kanyama and R  ty 2010; Cottrell, 2003; Dietz, Kalof, and Stern, 2002; Levin, 1990; Kallgren, Reno, and Cialdini 2000; Tiller 2009; Zelezny, Chua, and Aldrich, 2000). Explanations offered by prior research for the gender gap in environmentalism have focused primarily on dispositional personality traits. For example, women's concern for the environment has been attributed to their tendency to be more prosocial, altruistic, and empathetic (Dietz, Kaloff, and Stern 2002; Lee and Holden 1999). Women also display superior perspective taking and a stronger "ethic of care," which have both been linked to environmentalism (Zelezny Chua, and Aldrich, 2000). In addition, women may exhibit greater commitment to the environment because they are more inclined to adopt a future time perspective (e.g., Eisler and Eisler, 1994) and are more distrustful of institutions, less focused on economic issues, and more concerned with health and safety (Davidson and Freudenburg 1996).

In this research, we propose a novel explanation for the observed gender gap in environmentalism. Specifically, we contend that this gap may arise not only from personality differences between men and women, but also from the motivated attempt of consumers, particularly men, to maintain their gender identity. To the extent that environmentally-friendly ("green") behavior and products are perceived as more feminine than masculine, we posit that male consumers may be motivated to avoid or even oppose green products in order to safeguard or signal their gender identity. As a result, we predict that when a man's masculinity has previously been threatened, he will subsequently be even more resistant to green products. However, if a man's masculinity has previously been affirmed, his likelihood of selecting green products may increase because he feels less compelled to assert his masculinity through his subsequent product choices. On the other hand, because women tend to be less preoccupied with maintaining gender identity, we do not expect their preference for green (vs. non-green) products to differ even if their gender identity had been situationally affirmed or threatened.

Evidence from three empirical studies is consistent with these predictions and lends support to our proposition that the motivated maintenance of gender identity contributes to the gender gap in environmentalism.

Study 1 aimed to test our basic assumption that green (vs. non-green) products are perceived to be more feminine than masculine. To do this, we administered an Implicit Association Test (IAT) to measure participants' attitudes towards the gender-affiliation and greenness of products. As expected, participants were significantly more accurate and faster in responding when "green" and "feminine" were paired than when "non-green" and "masculine" were paired (see Figure 1).

Study 2 aimed to test whether the association between green products and femininity affects person perception. Because our theory suggests that the fear of being considered less masculine is what drives men to avoid green products and behaviors, it was important to test whether this stereotype (that "green" men are more feminine) indeed exists. Participants read a scenario in which two men left different checkout lanes at the grocery store; one man carried his groceries in a plastic bag, while the other carried his groceries in a reusable canvas bag. Participants then described the extent to which various traits described each man. As expected, the man carrying the reusable canvas bag was perceived as not only more green, but also more feminine than the man carrying the plastic bag.

Study 3 aimed to investigate the impact of affirming versus threatening participants' gender identity on their preferences for green vs. non-green products. If our theory is correct that men avoid green behaviors in order to escape being judged by others as feminine, then affirming their masculinity should reduce their concern and increase their preference for green products. In contrast, threatening their masculinity should increase their concern of being judged as feminine and decrease their preference for green products. No such effect is hypothesized for women. Participants were asked to provide a writing sample and then given false feedback that the writing sample indicated that they write more like a man [woman]. Then, in a purportedly unrelated study, participants indicated their preference for a drain cleaner that was framed as green [non-green]. As expected, the green product was significantly more preferred by male participants whose masculinity was affirmed rather than threatened. However, females' preference for a green product was less affected by affirming versus threatening their gender identity (see Figure 2). However, unlike preference for the green product, preference for the non-green product was not significantly affected by affirming versus threatening the gender identity of male or female participants.

Together, these findings support our theory that men avoid green behaviors at least in part because they fear being judged as less masculine, and highlight the previously undocumented role of gender identity maintenance in men's avoidance of green behaviors. At a conceptual level, these results help to bridge literatures on gender identity maintenance and environmentalism. While prior transformative consumer research has tended to focus on facilitating green consumption through enhancing the appeal of green products or behaviors to consumers (e.g., Goldstein, Cialdini, and Griskevicius 2008; Griskevicius, Tybur, and Van den Bergh 2010; Kidwell, Farmer, and Hardesty 2013), our research differs conceptually in its focus on facilitating green consumption through attenuating inhibitions towards green consumption. In addition, our findings contribute to existing research on how gender stereotypes can affect consumer behavior (Jung et al. 2014; Rozin et al. 2012) by identifying conditions under which men engage in gender identity maintenance by avoiding green products or behaviors which are considered feminine. Despite a prevalent stereotype that it is not manly being green, we show that affirming a man's sense of masculinity can mitigate his inhibitions about engaging in green behavior and increase his preferences for green products. This strategy could be of considerable value to marketers of green products and policymakers who wish to promote green behavior.

FIGURE 1

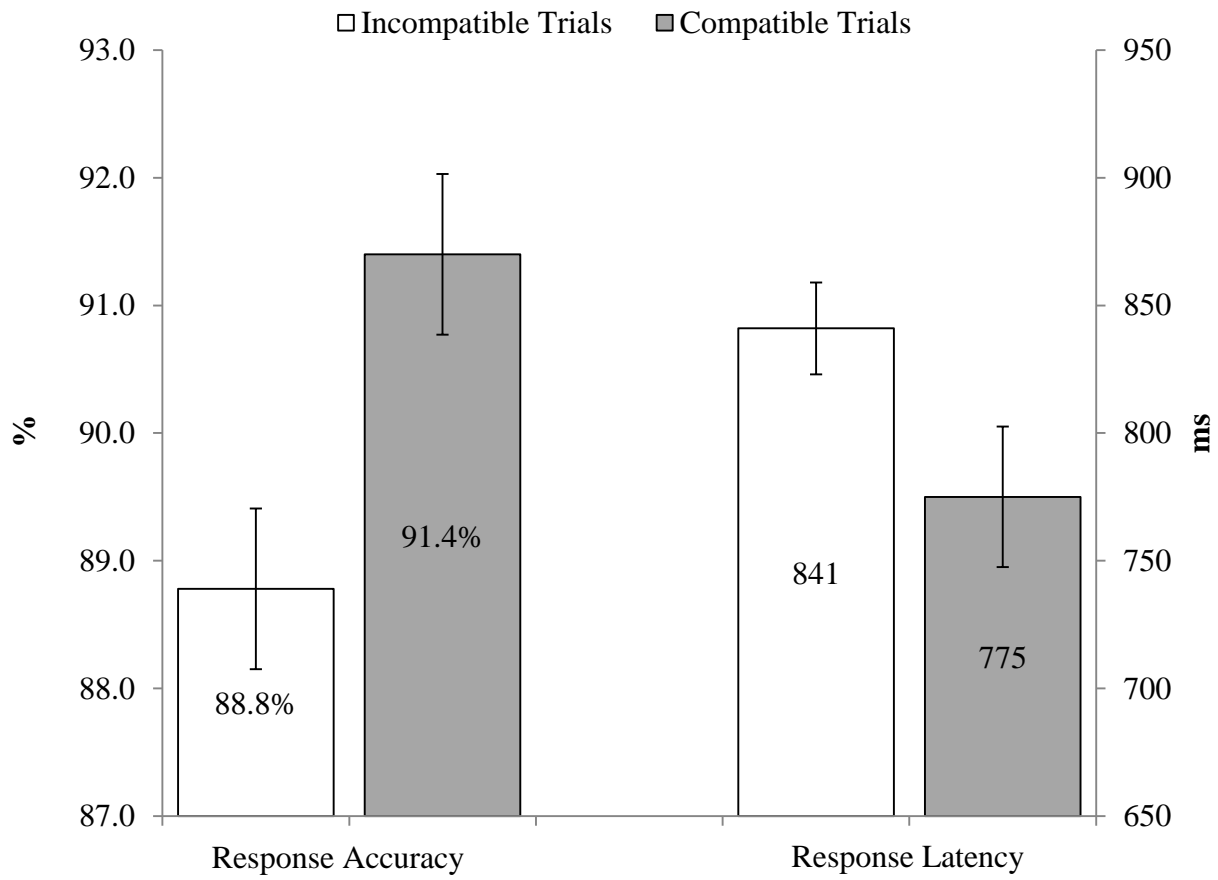
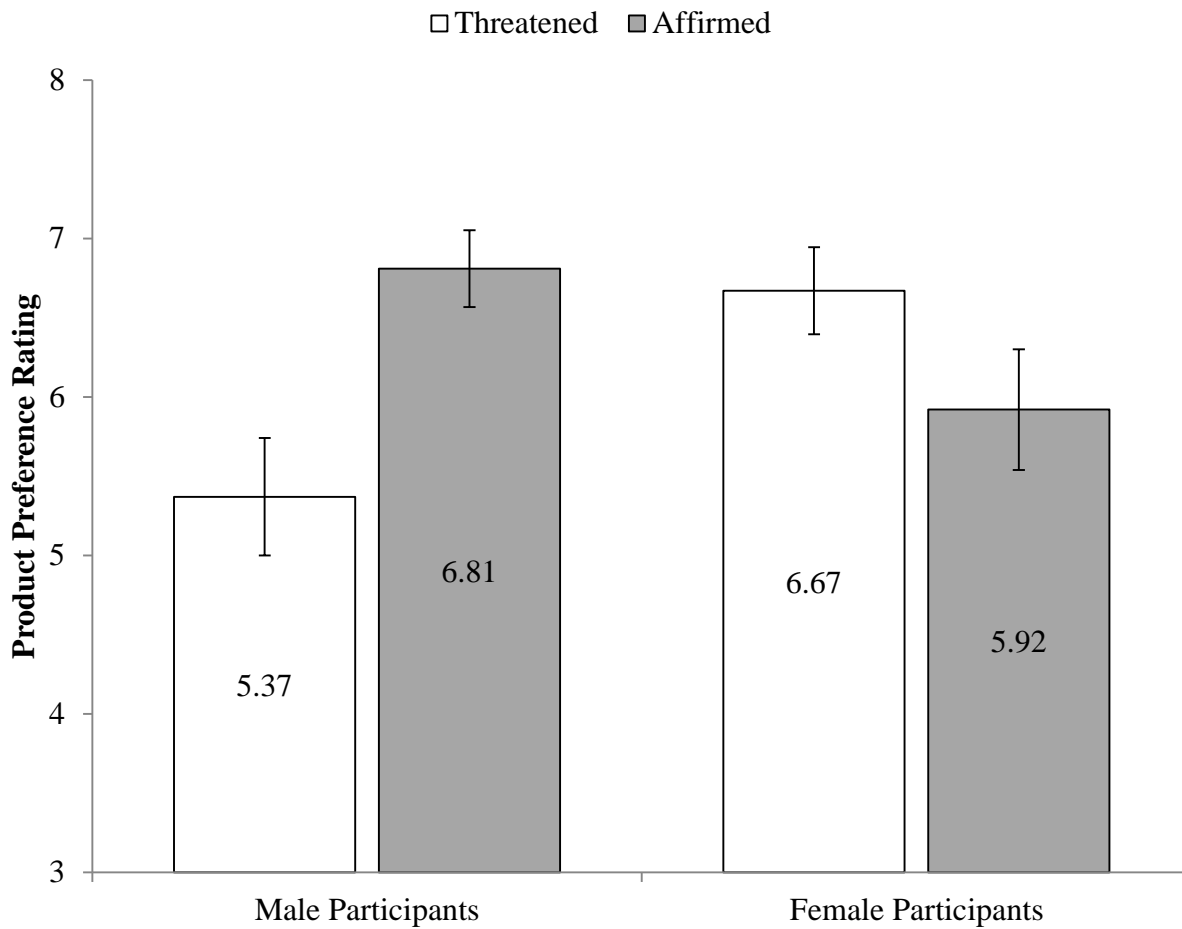


FIGURE 2



For more information contact: [aaron.brough@usu.edu](mailto:aaron.brough@usu.edu)

### *Identity Agency Profiles*

Carter Morgan, University of Miami, USA\*

Keri Kettle, University of Miami, USA

Each of us has a self-concept – an overall sense of who we are – that includes the different identities we possess, such as our gender identity and social identities (Reed et al 2012). Consumers often express their identities through the consumption of particular products and brands (Belk 1988; Berger and Heath 2007), and although they like identity-congruent products and brands, consumers generally don't like being told which products they must choose to express an identity. Rather, consumers seek agency in identity-relevant consumption contexts (Bhattacharjee, Berger, and Menon 2014).

But do consumers always seek agency in identity expression? Although consumers generally prefer autonomy in their choices and actions (DeCharms 1968; Deci and Ryan 1985; Moller, Ryan, and Deci 2006), not all identities are associated with high levels of autonomy. For instance, military members are accustomed to an environment with rigid regulations, and the military identity is associated with a distinct lack of autonomy in adherence to those rules. Could the activation of an identity associated with low autonomy actually lead consumers to seek lower levels of agency?

We propose that each identity is associated with a level of autonomy – its agency profile. In line with prior research on the behavioral dynamics of identity activation (Escalas and Bettman 2005; Mercurio and Forehand 2011; Reed 2004), we further propose that the activation of an identity makes salient its associated level of autonomy, and that this leads consumers to seek a level of agency congruent with that salient identity’s agency profile.

To begin our investigation, we drew from prior findings to assess which associations relate consumers’ sense of agency to their identities (Bhattacharjee et al. 2014; Hong and Faedda 1996; Moller et al. 2006). Consistent with this literature, we developed a 6-item identity-agency profile scale, IA scale, that examines consumers’ identity-specific associations with autonomous versus constrained behavior (e.g., “When in a context where my [target identity] is relevant, my freedom of choice is restricted”; -5 = strongly disagree, 5 = strongly agree). Studies 1 and 2 examined our scale’s reliability, and suggest that identities are associated with distinct levels of agency. Study 3 examined whether the activation of an identity leads consumers to seek a level of agency congruent with that identity’s agency profile.

Study 1 examined identity agency profiles using a convenience sample of 25 college students. Participants provided responses to the IA scale in a survey including six target identities: gender, nationality, race/ethnicity, family (i.e., son/daughter identity), university student, and Greek member (i.e., fraternity/sorority identity). The results revealed a high level of internal reliability ( $\alpha_{\text{gender}} = .78$ ;  $\alpha_{\text{nationality}} = .80$ ;  $\alpha_{\text{race/ethnicity}} = .90$ ;  $\alpha_{\text{university student}} = .81$ ;  $\alpha_{\text{family}} = .51$ ;  $\alpha_{\text{greek member}} = .76$ ) among the IA scale’s six items, and pairwise comparisons revealed significant differences between the target identities’ composite IA scores. For instance, the level of autonomy associated with the nationality identity was significantly more than that associated with the family identity ( $t(24) = 4.00$ ,  $p < .001$ ), while the race/ethnicity IA score was significantly more than the IA score for the gender identity ( $t(24) = 2.99$ ,  $p = .006$ ). These results provided initial evidence that identities are associated with different agency profiles.

Study 2 built on our initial findings by examining IA scores for seven identities among a sample of 89 American participants recruited from Amazon Mechanical Turk (mturk). Findings revealed a high level of internal reliability among the IA scale’s six items across the identities ( $\alpha_{\text{gender}} = .86$ ;  $\alpha_{\text{nationality}} = .79$ ;  $\alpha_{\text{race/ethnicity}} = .88$ ;  $\alpha_{\text{family}} = .84$ ;  $\alpha_{\text{environmentally-friendly}} = .83$ ;  $\alpha_{\text{parent}} = .78$ ;  $\alpha_{\text{sports fan}} = .84$ ), and pairwise comparisons again revealed that IA scores differed significantly between distinct identities. For example, participants associated significantly higher autonomy with their American identity ( $M = 1.07$ ) than with their family identity ( $M = -.19$ ;  $t(88) = 2.17$ ,  $p = .032$ ).

Study 3 builds on recent work suggesting that consumers typically prefer identity-referencing messages (e.g., “A good beer for men”) to identity-defining messages (e.g., “The only beer for men!”), because the latter constrain consumers’ sense of agency (Bhattacharjee et al. 2014). We hypothesized that this effect would reverse for low-agency identities, because a lack of agency is congruent with those identities. Thus, we predicted that the activation of a low agency identity would lead consumers to prefer an identity-defining (as compared to identity-referencing) message.

Study 3 was a 3 (activated identity: son vs. male vs. American) x 2 (message type: identity-defining vs. identity-referencing) mixed design with message type as the within-subjects factor. We asked one hundred and sixty-six American men recruited from mturk to evaluate different beer brand advertisements. First, we activated participants’ randomly assigned identity (Reed 2004). Second, we asked participants to evaluate two counterbalanced advertisements, one with an identity-defining message and the other with an identity-referencing message. Finally, participants provided their purchase likelihood for the advertised brand. As hypothesized, a two-way mixed ANOVA revealed a significant interaction ( $F(4,166) = 3.07$ ,  $p = .018$ ). Further, participants activated with the son identity (i.e., low agency identity) reported a higher purchase likelihood in response to the identity-defining message than the identity-referencing message ( $t(166) = 2.58$ ,  $p = .011$ ). Finally, those participants activated with the gender identity (i.e., high agency identity) had a marginally lower mean purchase likelihood in response to the identity-defining message as compared to the



identity-referencing message ( $t(166) = -1.77, p = .069$ ), while participants activated with the nationality identity (i.e., high agency identity) demonstrated similar directional differences in purchase likelihood in response to the identity-defining versus identity-referencing message types ( $t(168) = -.68, p > .05$ ).

In sum, this research shows that identities have agency profiles – a level of autonomy associated with an identity. We develop a scale to measure the agency profile, and we demonstrate that the activation of an identity leads consumers to seek a level of agency congruent with the salient identity's agency profile.

This research contributes to identity research by demonstrating that consumers do not always value agency in identity expression. Furthermore, our results inform managers how to better target consumer segments when utilizing identity marketing messages.

For more information contact: [smorgan@bus.miami.edu](mailto:smorgan@bus.miami.edu)

### ***Ironic Consumption***

Caleb Warren, Texas A&M University, USA\*

Gina S. Mohr, Colorado State University, USA

Consumers typically covet the meanings associated with the products they use (Belk 1988; Levy 1959). Most Rolex wearers want to seem classy, gangsta rap fans want to seem tough, and flag wavers want to seem patriotic. But sometimes consumers use a product while trying to dissociate from the meaning or identity it normally signals. Consider an atheist who collects Bible action figures, a marijuana smoker who wears an anti-drug shirt, or an urban millennial who drinks Pabst beer while wearing a trucker hat. Our research explores cases like these in which consumers use a product (brand, style, behavior, etc.) to be ironic.

Although there is an established literature on literal symbolic consumption – that is, using products to signal who you are or avoiding products to signal who you are not (Belk, 1988; Berger & Heath, 2007; Douglas & Isherwood, 1978; Veblen, 1899) – far less is known about ironic consumption. To explore the prevalence of, and motivations for, ironic consumption, we conducted a study on mTurk ( $N = 417$ ). Over 20% of respondents reported consuming a product ironically. Examples included outdated fashions (e.g., a watch from the 90s), styles associated with subordinate social groups (e.g., dressing like a nerd), and products suggesting a behavior from which the consumer abstains (e.g., a non-smoker wearing a Marlboro hat). The most common reason participants offered for ironic consumption was that they wanted to be humorous. Disparaging or mocking others was the next most frequently mentioned reason.

The goal to be funny, while dissociating from the product's prevalent meaning, is what distinguishes ironic consumption from literal symbolic consumption. However, in order for ironic consumption to elicit humor, the audience needs to both recognize that the consumer is being ironic and perceive the ironic consumption to be humorous. Therefore, our second study investigates when people detect ironic consumption and our third study examines how they evaluate ironic consumers.

People detect linguistic irony when an utterance is the opposite of what the speaker intends (Utsumi, 2000), and they detect situational irony when an occurrence is the opposite of what they would normally expect (Lucariello, 1994). We similarly expect that people will detect ironic consumption only when the meaning or identity associated with a consumption behavior is different than the meaning or identity of the consumer (hereafter, an incongruent product). However, not all incongruent products should seem ironic. Consumers often use incongruent products because they covet an aspirational identity (Simmel 1957). For example, a child wears a Lakers jersey not to be ironic but because he wants to be an NBA star. We therefore hypothesize that irony will be detected only when a consumer uses an

incongruent product associated with a lower status group (e.g., a cool kid who dresses like the dorky kids). When consumers use an incongruent product associated with a higher status group (e.g., a dorky kid who dresses like the cool kids), the consumption will seem literal rather than ironic.

We tested our hypothesis using a 2 (consumer status: high, low) x 2 (product status: high, low) between-participants experiment. Undergraduates (N = 374) read about a high school student who is part of a popular clique of juniors and seniors (high status consumer) or part of an unpopular clique of freshman (low status consumer). Each clique is associated with a distinct fashion style (either “preppy” or “grunge;” pairing counterbalanced). Participants read that the student dresses either like his own clique or the other clique. Participants indicated that the clothing choice was ironic only when the high status student dressed like the low status clique (M = 3.64). Incongruently dressing like the high status clique didn’t make the low status student seem ironic (M = 2.63) nor did using a congruent product, regardless of whether the student was from the high status clique (M = 2.18) or low status clique (M = 2.33; interaction:  $p < .001$ ).

Consumers use products ironically in attempt to be funny, but will their attempts succeed? People perceive humor when they aren’t personally bothered by something that seems threatening or wrong; in other words, when a violation seems benign (Veatch, 1998; Warren & McGraw, 2015). Consumers who ironically use a product are essentially mocking the behavior of a lower status group (a violation). People who personally embrace the identity associated with a product are less likely to consider the ironic consumption of that product benign (McGraw & Warren, 2010). For example, a consumer ironically wearing a D.A.R.E. shirt is more likely to irk anti-drug advocates than people who are more accepting of drug use. Therefore, we hypothesize that the ironic use of a product (e.g., a D.A.R.E. shirt) will only seem funny to people who don’t embrace the identity typically associated with the product (e.g., people tolerant of drugs). Instead of perceiving humor, those who value the product’s literal meaning (e.g., anti-drug people) are predicted to dislike consumers who use the product ironically.

Consistent with these predictions, an experiment in which undergraduate participants (N = 221) evaluated a consumer who wore a D.A.R.E. shirt either to support the program or to be ironic found that evaluations depended on participants’ attitudes towards the D.A.R.E. program. Participants with a favorable attitude of D.A.R.E. did not think the consumer was funny and liked him significantly less when he wore the shirt to be ironic. Conversely, participants with a worse attitude towards D.A.R.E. thought the consumer was funnier when he wore the shirt ironically (interaction:  $p < .05$ ) and their impression of him was less negative than D.A.R.E. advocates (interaction:  $p < .001$ ). Interestingly, however, even participants with a relatively unfavorable attitude towards D.A.R.E. and who considered the ironic use of the shirt humorous had a less favorable impression when the consumer wore the shirt ironically.

In sum, consumers sometimes use products ironically, typically to try to be humorous. However, even when the audience correctly detects irony, consumers who use a product ironically tend to make a negative impression on others, especially those who personally embrace the predominant meaning of the product.

For more information contact: [cwarren@mays.tamu.edu](mailto:cwarren@mays.tamu.edu)

# ***Individual Papers: Feelings in control: Affective influences on purchase and consumption decisions***

## ***Appreciating What You've Got: The Effect of a Regular Gratitude Practice on Perceived Resource Availability and Materialism***

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

Sunaina Chugani, Baruch College, USA

Jae-Eun Namkoong, University of Nevada, Reno

Consumers typically covet the meanings associated with the products they use (Belk 1988; Levy 1959). Most Rolex wearers want to seem classy, gangsta rap fans want to seem tough, and flag wavers want to seem patriotic. But sometimes consumers use a product while trying to dissociate from the meaning or identity it normally signals. Consider an atheist who collects Bible action figures, a marijuana smoker who wears an anti-drug shirt, or an urban millennial who drinks Pabst beer while wearing a trucker hat. Our research explores cases like these in which consumers use a product (brand, style, behavior, etc.) to be ironic.

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For more information contact: [sunaina.chugani@baruch.cuny.edu](mailto:sunaina.chugani@baruch.cuny.edu)

### ***Haptic Product Configuration: The Influence of Multi-Touch Devices on Experiential Consumption and Sales***

Christian Hildebrand, University of St. Gallen, Switzerland\*

Jonathan Levav, Stanford University, USA

Andreas Herrmann, University of St. Gallen, Switzerland

Although the use of multi-touch devices across various industries and product domains is increasing, the impact of novel interaction modes and device types is unclear both with respect to the economic implications for firms as well as the underlying psychology of decision making of consumers (Yadav and Pavlou 2014). From a theoretical perspective, multi-touch devices can be conceptualized as temporary extensions of the body sensorimotor space (Gallace and Spence 2010) where the slow stroking of the device surface may activate receptors related to the encoding of pleasantness (Olausson et al. 2008). This mirrors prior work on touch and decision making, highlighting the role of touch as a driver of object attachment and product liking (Brasel and Gips 2014; Peck and Shu 2009). The key hypothesis of the current research is that multi-touch devices have a differential effect on consumers' consumption experience and choice. Specifically, the current work posits that multi-touch devices cause consumers to experience the shopping process as more experiential and to choose more hedonic product features, leading to ultimately higher-priced products.

The conceptual background of the current research is built around recent work on the role of preference modalities and the role of touch as a driver of attractiveness and attachment toward objects (Krishna 2012). A prominent finding in the latter research is that objects that are actively touched, or come into contact with the self, are judged more positively. These effects were found to be even stronger for more affect-rich relative to affect-poor stimuli (Shu and Peck 2011). Yet, these more direct forms of touch may even persist in the context of more indirect (or mere) forms of touch using multi-touch devices (Brasel and Gips 2014; Peck et al. 2013). Thus, the central proposition of the current research is that the use of multi-touch devices promotes more experiential (shopping) experiences during a product configuration task and increases the choice of more hedonic product features, leading to ultimately more higher-priced products.

In Study 1, we examined the influence of multi-touch devices on actual customers' product configurations in cooperation with a large European car manufacturer. We collected data of  $N=95,886$  car buyers over a time-span of 2 years and merged two distinct streams of data. We combined the data of actual car configurations from the manufacturers' ordering system with on-site tracking data logging customers' device information during the product configuration process. In line with our proposition, we find that customers using a multi-touch relative to a non-touch device configured significantly more feature-rich cars ( $M_{\text{Desktop}}=19.3$ ,  $M_{\text{Tablet}}=21.4$ ,  $t(95,884)=9.267$ ,  $p<.001$ ) which were ultimately higher priced ( $M_{\text{Desktop}}=\text{€}52,461.82$ ,  $M_{\text{Tablet}}=\text{€}61,563.39$ ,  $t(95,884)=18.05$ ,  $p<.001$ ). Although Study 1 provides initial support for our proposition, the current results are likely to be affected by self-selection and segmentation effects such that consumers with a larger disposable income are potentially more likely to own a multi-touch device and, in turn, to configure more higher-priced cars.

Thus, Study 2 was designed with the purpose to examine the proposed direction of causality and to assess consumers' subjective experiences during the product configuration task. In cooperation with a European market research company,  $N=205$  prospective car buyers were pre-screened to own both a tablet and a desktop PC, and were randomly assigned to configure a car for themselves either using their own multi-touch device or desktop PC. As predicted, the use of a multi-touch device relative to a non-touch device caused significantly more feature-rich, higher priced cars ( $M_{\text{Desktop}}=\text{€}40,100.70$ ,  $M_{\text{Tablet}}=\text{€}44,566.72$ ,  $t(203)=5.491$ ,  $p<.001$ ), consisting of significantly more hedonic relative to utilitarian product features (as identified by a pre-test), as well as a significantly more experiential configuration experience for consumers ( $M_{\text{Desktop}}=5.18$ ,  $M_{\text{Tablet}}=5.82$ ,  $t(203)=4.423$ ,  $p<.001$ ).

Study 3 was designed to rule out a series of alternative explanations by (1) using non-owned devices, (2) holding screen size constant, and (3) to control for consumers' body position. For this study, a total of  $N=70$  participants were randomly assigned to configure a bike for themselves in a lab setting, either using a touch-enabled or a touch-disabled tablet (with mouse input). In line with our theorizing, we find that consumers using the touch-enabled tablet configured a larger number of hedonic product features that were ultimately higher priced (as rated by a pre-test;  $M_{\text{Desktop}}=202.24$ ,  $M_{\text{Tablet}}=300.82$ ,  $t(68)=3.984$ ,  $p<.001$ ), and perceived the configuration process as significantly more experiential ( $M_{\text{Desktop}}=4.35$ ,  $M_{\text{Tablet}}=4.87$ ,  $t(68)=2.009$ ,  $p<.05$ ).

Studies 4 and 5 were designed to provide an experimental field demonstration and a generalization across product categories respectively. In Study 4, we conducted a field experiment in cooperation with a Swiss day spa. In this study,  $N=75$  actual customers configured their preferred day spa package for themselves mirroring the experimental setup of study 3 (random assignment to touch-enabled or touch-disabled tablet). As predicted, the touch enabled vs. disabled tablet caused significantly higher-priced day spa packages ( $M_{\text{TouchDisabled}}=\text{CHF}328.89$ ,  $M_{\text{TouchEnabled}}=\text{CHF}560.51$ ,  $t(73)=3.708$ ,  $p<.001$ ) and, as a side result based on a follow-up customer survey, they also perceived a larger relationship closeness toward the company relative to customers using the touch-disabled device ( $M_{\text{TouchDisabled}}=4.99$ ,  $M_{\text{TouchEnabled}}=6.39$ ,  $t(73)=4.064$ ,  $p<.001$ ).

In Study 5,  $N=180$  MTurk participants chose for each of 28 product categories whether they would choose a tablet device or a PC with mouse input to configure a product for themselves. Following the binary choice between both devices, consumers rated each product category on a utilitarian vs. hedonic scale based on prior work. A logistic mixed effects model with random intercept per individual

revealed that consumers choose multi-touch devices for more hedonic product categories ( $p < .01$ ). However, qualitative interviews revealed that consumers were not aware of the effect that the device itself can have on their purchase decisions.

Overall, the current work contributes to the emerging literature on preference modalities in consumer research, highlighting the interplay between technology interfaces and human perception (i.e., haptics). The findings also contribute to and extend prior work on the role of touch toward the even indirect (or mere) role of touch via touch-enabled technology interfaces. The findings have important implications for companies across various domains, showing that multi-touch devices promote experiential shopping experiences for consumers and the choice of more hedonic product features.

For more information contact: christian.hildebrand@unisg.ch

***The bright side of dread: Anticipation asymmetries explain why losses are discounted less than gains***

David J. Hardisty, University of British Columbia, Canada\*

Shane Frederick, Yale University, USA

Elke U. Weber, Columbia University, USA

The desire to have good things immediately is much stronger than the desire to postpone negative outcomes (Thaler 1981). Though this "sign effect" is a robust result, the reasons for it are not well understood. We hypothesize that the desire to postpone losses is weaker than the desire to accelerate gains because aversive anticipation of bad things is stronger than the pleasurable anticipation of good ones, even after controlling for loss aversion. Anticipation utility predicts lower discount rates for losses, but has little effect on gains, producing the sign effect. This anticipation asymmetry happens because waiting for a gain is a mixed emotional experience that is both pleasurable and painful, whereas waiting for a loss is a more unidimensional painful experience.

Loewenstein (1987) famously found that people were willing to pay more for a kiss from a movie star in three days than for an immediate kiss, and inferred that the increased value of the delayed kiss was driven by savoring. However, we ran several replication studies (Pilot Studies 1-3) and were not able to replicate this finding. This suggests that savoring may be less robust than previously thought. In contrast, several papers have documented the importance of dread in intertemporal choice. For example, Berns and colleagues (2006) assessed the dread for electric shocks using both self-report and fMRI of brain activation during the period preceding them. People who reported greater "anticipatory anxiety" exhibited more activity in posterior elements of the cortical pain matrix, and had a stronger preference for immediate shocks. Such results demonstrate the efficacy of self-report measures of dread. The relative strength of anticipation for positive vs negative events, however, has rarely been examined, and is our focus.

In Study 1 ( $n=193$ ), participants chose between \$49 today OR \$60 in 89 days. These amounts referenced gains or losses depending on the condition to which respondents had been randomly assigned. Participants were then told to "Imagine expecting to receive [pay] \$60 in 89 days." and were asked "How psychologically pleasurable or displeasurable would the **anticipation** be? In other words, how would you feel **while waiting** for it?" They responded on a 201 point bipolar scale ranging from -100 "strongly dislike the feeling of waiting" on the left to +100 "strongly like the feeling of waiting" on the right, with 0 labeled "neutral." Participants then answered 26 other choices between smaller sooner and larger later rewards [penalties] (all from Kirby, Petry, & Bickel, 1999) and some demographic questions.

Participants' desire for immediate gains was stronger than their desire to postpone losses, replicating the sign effect. SS rewards were preferred 57% of the time in the gain conditions compared to just 26% preference for LL losses,  $t(191) = 10.7, p < .001$ . This implies annualized discount rates of 332% for gains and 34% for losses.

Anticipating a future loss was rated as  $-36 (SD = 46)$ , whereas anticipating a future gain was rated as  $-5 (SD = 55)$ ,  $t(191) = 5.6, p < .001$ ,  $d = 0.8$ , supporting our hypothesis. Moreover, these expected anticipatory emotions mediates the sign effect,  $p < .001$ . The valence of the event in question affects judgments of the associated anticipatory emotions, which in turn predicts preferences between temporally displaced outcomes.

In Study 1b ( $n=100$ ), we show this same pattern of results in a consumer choice setting with a choice between two air conditioning units. One option had a cheaper upfront cost but was energy inefficient, wasting money in the long run. We framed the future energy usage of both models as gains or losses, between subjects. In the positive frame, 59% of participants chose the "impatient" model, compared with 29% in the negative frame,  $t(92) = 3.0, p < .01$ . Furthermore, this result was mediated by asymmetries in anticipation ratings, replicating Study 1a.

In Study 2 ( $n=169$ ), we demonstrate the robustness of this anticipation asymmetry across twenty different events (10 gain and 10 loss), including classics from the literature such as the electric shock and kiss from a movie star. We also demonstrate the asymmetry across different time horizons, from 3 days to 5 years.

In Studies 1 and 2, we made no attempt to equate the *subjective* magnitude of positive and negative events. Thus, our suggestion that that dread is stronger than savoring may simply reflect the fact that the set of negative events were more psychologically significant than the set of positive events (i.e., loss aversion). We addressed this in Study 3 ( $n=106$ ) by presenting each participant with pairs of positive and a negative event and dynamically adjusting the magnitudes until each participant was indifferent between accepting or rejecting the pair, indicating that the positive and negative event had been subjectively equated. Notably, the median participant was indifferent between a \$25 loss and a \$49 gain for the financial items, replicating the 2:1 ratio typically found for loss aversion (Kahneman and Tversky, 1979). Participants then gave their time preferences and anticipation ratings for these tailor matched events. The results replicated previous studies, replicating the sign effect in choices, the asymmetry in anticipation, and the ability of anticipation to predict choices.

If not loss aversion, then what drives this asymmetry in the anticipation? In Study 4 ( $n=69$ ), we demonstrate that anticipation of gains is a mixed emotional experience, while thinking about losses is a relatively unidimensional experience. Participants rated both the positive and negative anticipation of each event on separate questions. We found that when thinking about receiving a future gain, people look forward to the event and experience some pleasure while imagining it ("savoring"), but we also feel some deprivation that they don't have it yet ("impatience"), and this makes the anticipation somewhat aversive as well. Overall, then, anticipation of gains is neutral or weakly positive. In contrast, when thinking about paying \$60 in the future, people dislike thinking about the future loss ("dread"), but derive little positive enjoyment from the fact that we don't have to pay yet ("enjoying the moment"). The net result is strong disutility when anticipating future losses.

For more information contact: david.hardisty@sauder.ubc.ca

## *Save Dessert For Last? The Effect of Food Presentation Order on Food Choice and Caloric Intake*

Martin Reimann, University of Arizona, USA\*

David Flores, University of San Francisco, USA

Raquel Castaño, Tecnológico de Monterrey, MEXICO

Consumers often have to sequentially combine a meal from a set of healthy and indulgent food options (e.g., all-you-can-eat buffet restaurants and school cafeterias). In this research, we look at how changing the order of food presentation—dessert first or dessert last—can substantially alter downstream food choice and caloric intake. Building on the literatures of order effects (e.g., Haugtvedt & Wegener 1994) and self-regulation (Dhar & Simonson, 1999; Fishbach & Dhar, 2005), we propose that in long food sequences, a healthy (indulgent) food item at the beginning rather than the end of the sequence will lead consumers to balance their first choice and subsequently choose higher (lower) calorie dishes and consume more (less). Our reasoning is that, due to a primacy effect, the first item chosen in a sequence will influence subsequent choices. Specifically, consumers attempt to resolve the goal conflict that arises from the first item by pursuing a competing goal in their remaining subsequent choices. Four studies provide evidence of this effect and the underlying mechanism.

Study 1 was a field study conducted in a real cafeteria to test whether positioning a healthy or an indulgent dessert at either the beginning or the end of the food lineup affected the choice of main and side dish (light or heavy), and overall caloric intake. Consistent with our prediction, we found that 67% of participants selected the lighter main dish when an indulgent dessert was positioned first compared to 36% when a healthy dessert was positioned first ( $p < .05$ ), and 70% of participants chose the lighter side dish in the indulgent dessert first condition, compared to 39% of participants in the healthy dessert first condition. In addition, participants consumed significantly fewer calories when an indulgent dessert was positioned first ( $M = 581$ ) than when a healthy dessert was positioned first ( $M = 829$ ;  $p < .001$ ).

Study 2 was conducted to replicate the findings of Study 1 in an on-line decision making context and to explore the moderating role of cognitive resources. Because primacy effects are reduced when an individual's memories are occupied (Biswas, Biswas, & Chatterjee, 2009), we expected that participants under cognitive load would be less likely to balance their food choices and caloric intake on the basis of the first item. Study 2 had a 2 cognitive load (low, high)  $\times$  2 dessert presentation order (first, last)  $\times$  2 dessert type (healthy, indulgent) between-subjects design. We set up a virtual cafeteria in a web environment that presented foods in sequence. We asked participants to select food items to build their meal and to indicate how much of each they would eat. Before participants began selecting their foods, we asked participants to memorize a seven-digit number (high cognitive load) or a two-digit number (low cognitive load) following a previously established cognitive load manipulation (Shiv & Fedorikhin, 1999). Under low cognitive load more participants selected the lighter main dish (77% versus 51%), the lighter side dish (65% versus 34%), and consumed fewer calories ( $M_{\text{Indulgent}} = 737$  versus  $M_{\text{Healthy}} = 916$ ) compared to the healthy dessert first condition (all  $ps < .05$ ). However, under high cognitive load conditions, there were no significant differences in main dish choice, side dish choice, or consumption between the indulgent dessert first condition and the healthy dessert first condition (all  $ps < .10$ ).

In order to garner process evidence we used a “two randomized experiments strategy” (Stone-Romero & Rosopa, 2011). Since indulgences can evoke feelings of guilt (Kivetz & Simonson, 2002), and healthy items can signal consistency towards a healthiness goal (Fishbach & Dhar, 2005) evoking feelings of deservingness, we hypothesized that guilt and deservingness explain the effect of dessert presentation order and dessert type on reward/restraint. In turn restraint/reward responses lead consumers to eat fewer/more calories.

In Study 3a, we tested the first link between order of presentation [first, last] and dessert type [healthy, indulgent] and the proposed mediator (restraint/reward). We used a 2 dessert presentation order (first, last)  $\times$  2 dessert type (healthy, indulgent) between-subjects design and a similar procedure to the one used in Study 2, except that right after participants selected the first item in the sequence, they



were prompted to choose between a zero-calorie (restraint) and a high-calorie (reward) drink and to rate how much they had restraint or rewarded themselves in their choice of drink. They also rated how guilty (PANAS-X; Watson & Clark, 1999) and deserving they felt (Mick & Faure, 1998). Significantly more participants chose the rewarding drink when the healthy dessert was presented first (51%), than when the indulgent dessert was presented first (16%). Participants who saw the indulgent dessert first restrained more ( $M = -31.05$ ) than did participants who saw the healthy dessert first ( $M = 18.43$ ;  $p < .001$ ). A bootstrapping analysis showed that guilt and deservingness significantly mediated the effect of dessert presentation order and dessert type on restraint/reward

In Study 3b, we tested the second link between mediator (restraint/reward) and dependent variable (total calories consumed). Participants were assigned to read a scenario that described the positive or negative consequences of food restraint or reward. After reading the scenario, participants chose a snack (chocolate bar or granola bar) and indicated what percentage of their chosen snack they would eat. Participants in the “reward” conditions had a significantly higher caloric intake ( $M = 151$ ) than participants in the “restraint” conditions ( $M = 116$ ;  $p < .01$ ).

Experiments 3a and 3b show that a healthy dessert presented first in a sequence causes consumers to feel a sense of deservingness, which in turn leads consumers to seek reward and consequently eat more calories. On the other hand, an indulgent dessert at the beginning of a food sequence leads consumers to feel guilty, which in turn leads consumers to restrain themselves by eating fewer calories.

The results suggest that changing the order of foods in a sequence is a simple environmental intervention that can be used to help consumers choose healthier food items and consume less.

For more information contact: [reimann@arizona.edu](mailto:reimann@arizona.edu)

**LUNCHEON AND PRESIDENTIAL ADDRESS**

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

**Garden Courtyard/Banyan Bzwy**

**Session 3**

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

***Symposium: Protect Yourself: the Social, Emotional & Self-Protecting Consumer***

**Chair:** Lisa Cavanaugh, University of Southern California, USA

***That's Not How I Should Feel: Emotions in Identity Management and Verification***

Nicole Coleman, University of Pittsburgh, USA\*

Patti Williams, University of Pennsylvania, USA

Individuals possess social identities—self-labels that provide behavioral guidance and construct the self (Tajfel and Turner 1986). Individuals engage in identity management, actively monitoring conformity with the active identity standard (Reed et al. 2012); consumers self-regulate their behaviors, thoughts, emotions, and preferences to correspond to these standards (Oyserman 2009). When individuals feel a discrepancy from the standard, they engage in verification processes to reassert and reinforce identity possession.

Recent work has shown that discrete emotions can be components of the identity standard, facilitating identity enactment (Coleman and Williams 2013). However, questions remain regarding in-identity emotional experiences on identity management and verification.

We examine the impact of identity-consistent and inconsistent emotional experiences on identity management. We utilize functional views which consider emotions as states of action readiness (Frijda 1986) that enable goal-pursuit (Tamir 2009), and are critical to identity-based motivation (Oyserman 2009). We find that as emotions are an important part of the identity standard, feeling an identity-inconsistent emotion undermines identity possession, thus prompting self-protection via identity verification. Specifically, experiencing identity-inconsistent emotions creates greater preference for (Study 1) and consumption of (Study 2) identity-relevant products. Also, experiencing identity-inconsistent emotions reduces processing resources, consistent with the cognitive demands of self-regulation (Study 3). Finally, when consumers self-affirm to reinforce the self-concept (White and Argo 2009) before experiencing an emotion, the need for verification is attenuated (Study 4), further evidence of emotions impacting a need for self-protection. These results demonstrate that self-protection processes do not arise exclusively from negative global or trait-based self-evaluations, as emphasized in past literature, but rather may occur when an important component, such as emotional states, within an identity's knowledge structure is challenged.

Study 1 used a 3 identity (athlete, volunteer, control) by 2 emotion (anger, sadness) design, leveraging the athlete-anger and volunteer-sadness emotion-identity associations. Participants completed a writing task to activate their athlete or volunteer identities (Reed 2004). Emotions were manipulated via facial/bodily feedback (Duclos et al. 2007), generating anger or sadness. Finally, participants evaluated pairs of products; each included an identity-relevant (e.g., Clif sport bar) and identity-neutral (e.g., Quaker Oats bar) product. Relative preference for identity-relevant products captured self-verification (White, Argo, and Sengupta 2012). A significant interaction ( $p < .05$ ) emerged; when athletes experienced the inconsistent emotion of sadness, they had greater preference for athletic products than when they experienced anger ( $p = .034$ ). Similarly volunteers experiencing inconsistent anger had greater preference for volunteerism products than those experiencing sadness ( $p < .05$ ).

Study 2 examined consumption, using a 3 identity (athlete, volunteer, control) by 2 emotions (anger, sadness) by 2 water brands (H<sub>2</sub>Help, H<sub>2</sub>Sport) design. Identities were activated with the writing task, then they experienced both the emotion induction (a 4-minute film clip) and the consumption opportunity. During the film, they could freely drink an 8-ounce bottle of water, labelled H<sub>2</sub>Help (volunteer) or H<sub>2</sub>Sport (athlete). Water consumed was the dependent variable. The predicted three-way interaction emerged ( $p < .05$ ). Athlete participants who experienced sadness consumed more of the athletic water (H<sub>2</sub>Sport) than the volunteer water (H<sub>2</sub>Help;  $p < .0001$ ). Further, those with an athlete identity and given H<sub>2</sub>Sport consumed significantly more when experiencing sadness than anger ( $p < .05$ ). These results indicate athletes consumed more identity-consistent (H<sub>2</sub>Sport) water when viewing the sad clip; the inconsistent emotion drove self-protective behavior. Similarly, participants with a volunteer identity also consumed water to repair the self after an emotion-induced self-threat. Those who saw the (inconsistent) angry clip consumed more of the volunteer-oriented (H<sub>2</sub>Help) water than athletic water ( $p < .001$ ). Volunteers given H<sub>2</sub>Help drank more when experiencing anger than sadness ( $p < .01$ ). Within the control conditions, there were no differences in consumption of the water based on either emotion or brand (all  $p > .2$ ).

Self-threatening experiences create cognitive disruptions (Steele 1997; Lisjak, Bonezzi, Kim, and Rucker 2015). Thus, reduced working memory capacity is a hallmark of self-discrepancies. Study 3 measured WMC using a 3 identity (athlete, volunteer, control) by 3 emotion (anger, sadness, neutral) design. Identities were primed as before, and emotion was manipulated with music. Working memory capacity was measured with an OSPAN task; the predicted interaction was significant ( $p < .001$ ). Athlete participants who experienced sadness had significantly lower OSPAN scores than the neutral condition ( $p = .016$ ), or those experiencing anger ( $p < .001$ ), evidence that experiencing the identity-inconsistent emotion of sadness led to decreases in WMC. Volunteer identity participants showed a similar pattern of results; experiencing the identity-inconsistent emotion of anger significantly lowered WMC versus the neutral condition ( $p = .040$ ), or sadness ( $p < .005$ ). In the control identity condition, there were no significant differences across the three emotions (all  $p > .39$ ).

Study 4 examined whether self-affirmation (asserting personal values) will protect individuals when experiencing identity-inconsistent emotions. The study was a 2 self-affirmation (yes, no) by 3 identity (athlete, volunteer, control) by 2 emotion (anger, sadness) design, where identity and emotion were activated as in Study 1. Prior to the identity prime, self-affirmation condition participants wrote about values (Shrira and Martin 2005). A significant three-way interaction emerged ( $p < .05$ ), such that in the no self-affirmation condition, the identity-inconsistent emotion effects replicated; athletes experiencing sadness had a significantly greater preference for athletic products than those experiencing anger ( $p = .001$ ) and volunteers preferred charitable products when experiencing anger ( $p < .05$ ). However, those individuals who had self-affirmed revealed no difference in preferences for identity-relevant products regardless of emotion ( $p = .86$ ).

In sum, we examine the role of emotions in identity management. Because emotions are functional and trigger physiological, cognitive, and behavioral responses, inconsistency between the individual's actual emotional state and that implied by the active identity undermines the veracity of that identity, triggering self-protection which is satisfied with identity-verification; increased preference for and consumption of identity-relevant products. Further, we demonstrate the far-reaching cognitive effects of identity management; disruptions to executive cognitive control. We find that inconsistencies in the identity's emotional standard create a sense of discomfort and discrepancy, leading consumers to self-protect; evidence for the importance of emotions in potentiating identity-relevant actions and procedures.

For more information contact: ncoleman@katz.pitt.edu

### ***How Feelings of Envy and Social Comparison Promote Innovation Adoption***

Jaeyeon Chung, Columbia University, USA\*

Leonard Lee, National University of Singapore, Singapore

Innovative products can be highly appealing but also very aversive to consumers. On the one hand, innovation adoption is associated with a number of positive symbolic qualities that are psychologically rewarding; it signals leadership, a sense of superiority, and a higher group status (Fisher and Price 1992). On the other hand, innovation adoption may also expose consumers to unanticipated risks, such as performance uncertainty, physical risks, and financial risks (Ram 1989).

In this research, we aim to examine which of these two aspects carry more weight in consumers' mind, particularly when consumers experience feelings of envy that arise from social comparison (Cohen-Charash 2008). While envious individuals might focus on the positive aspects of innovation as it allows them to improve their threatened self-image, they might also become more alert toward any risks that can further damage their already threatened self-image.

To understand whether envious individuals are driven by a compensatory self-enhancement motive or a precautionary self-protection motive, we draw upon research on dual-system models (Evans 2003). While people who attend to their feelings tend to process information more holistically and automatically, those who attend to their cognition tend to process information more analytically and deliberately. Based on these characteristic differences between the affective system and the cognitive system, we predict that envious individuals who attend to their affect are more motivated to repair their negative emotions and are more likely to perceive innovation adoption as an opportunity for compensatory self-enhancement. In contrast, envious individuals who attend to their cognition are driven by a greater self-protection motive; they are thus more likely to recognize the potential risks of innovative products and respond to them more negatively.

Experiment 1 was designed to test the basic effect that we hypothesized. Participants ( $N = 143$ ) either described an individual whom they envied (envy condition) or a person whom they knew (control condition) (Cohen-Charash 2009). Following this envy manipulation, in a purportedly unrelated study, all participants saw an advertisement for the “Smart Body Analyzer,” a smart multi-function, health-tracking scale. Lastly, participants responded to the Attention-to-Feelings scale (Salovey et al. 1995). The findings suggest that envious (vs. non-envious) consumers who are dispositionally inclined to attend to their feelings respond more favorably to innovative products, whereas envious (vs. non-envious) consumers who are inclined to attend to their cognitive thinking respond less favorably to innovative products ( $p = .009$ ).

Experiment 2 conceptually replicated the findings in experiment 1 by using a different method to manipulate envy: We asked 103 M-Turk participants to complete a Perceptual Ability Test. Participants were told that the goal of the test was to measure how well they processed visual information, and that people who performed within the top 15% would receive a reward of \$10. After completing a series of tasks, half of the participants (envy condition) read the following message on the screen: “Another M-Turk participant just before you won \$10 award! Your score is now entered into our database and your percentile is being calculated...”; the remaining half of the participants (control condition) only read the second half of this message without any mention of another M-Turk worker’s performance. Subsequently, participants in both conditions were told that they did not win the \$10. (The validity of this manipulation was ascertained in a pretest.) In a purportedly unrelated study, all participants then evaluated an innovative multi-function global adapter and completed the Attention-to-Feelings scale. The results again revealed that envious (vs. non-envious) participants who were dispositionally inclined to attend to their feelings rated the global adapter more positively. In contrast, envious (vs. non-envious) participants who attended to their cognitive thoughts rated the product more negatively ( $p = .024$ ).

Besides further replicating these basic results, the next two experiments provided process evidence for our hypothesized dual-process account. Experiment 3 employed mediation analysis to show that envious individuals who attend to their cognitive thinking (vs. feelings) are more concerned with the potential risks of innovation adoption, hence resisting against adopting new products. Participants ( $N = 104$ ) completed the same essay-writing envy-manipulation task from experiment 1 before evaluating an innovative finance-management app, Mint. They also responded to three risk-perception questions (Ram and Sheth 1989), followed by a short filler and the Attention-to-Feelings scale. Analysis revealed that not only were the findings from experiment 1 and 2 replicated ( $p = .010$ ; Attention-to-Feelings floodlight region significant above 5.79 and below 3.80), there was a significant moderated mediation of envy and attention-to-Feelings on attitude toward the app through perceived risk (indirect effect  $\beta = .18$ , 95% CI = .04, .37).

Experiment 4 demonstrated that due to self-enhancement motives, envious individuals who attend to their feelings (vs. cognitive thinking) have a more favorable attitude toward innovative products; by testing a boundary condition where some participants had the chance to self-affirm before the innovative-product evaluation, we showed that these individuals who were self-affirmed of their positive self-image no longer exhibited such a preference for innovative products. Participants ( $N = 172$ ) were randomly assigned to one of four conditions (Envy: yes/no)  $\times$  (Affirmation: yes/no). Participants first engaged in the same essay-writing envy-manipulation task as before. Next, half of the participants (affirmation condition) wrote about their most important life value, while the remaining half of the participants described what a typical AAA battery looks like (no-affirmation condition) (Gao, Wheeler, and Shiv 2009). All participants then evaluated the Smart Body Analyzer (as in Experiment 1) and responded to the Attention-to-Feelings scale. Consistent with our hypothesis, among individuals who were not self-affirmed, we again replicated the cross-over interaction from previous experiments ( $p = .010$ ; Attention-to-Feelings floodlight region significant above 5.289 and below 4.27). Importantly, envious participants who were self-affirmed prior to the innovation-evaluation task no longer showed such a preference ( $p = .999$ ).

This research contributes to the literature by highlighting the benefits and risks associated with innovative products. More importantly, we add to a limited but growing stream of work that examines how envy influences product consumption by suggesting the hidden motives (self-enhancement vs. self-protection) that drive consumers' product attitudes.

For more information contact: [jchung17@gsb.columbia.edu](mailto:jchung17@gsb.columbia.edu)

***Social Bonding without Liking: How Disgust Can Build Unique Social Connections***

Eugenia Wu, University of Pittsburgh, USA

Andrea Morales, Arizona State University, USA\*

Gavan Fitzsimons, Duke University, USA

Tanya Chartrand, Duke University, USA

Whether it's responding with disgust to unsanitary conditions or reacting with fear to the sight of a snake, individuals often experience negative emotions in response to threatening situations (Rozin and Fallon, 1987; Izard, 1977). In the present research, we examine how emotional reactions to a specific type of threat – disgust-inducing threats – influences the extent to which individuals identify with others. Importantly, we contrast disgust-inducing threats with fear-inducing threats to demonstrate a unique pattern of group identity construction, where liking diverges from identification and bonding.

When faced with a disgust-inducing threat, individuals respond in two key ways: with a strong and immediate distancing reaction, and with lowered evaluations of both disgust-eliciting and nearby objects (Rozin, Haidt, and McCauley, 2008). In the context of group identity construction, the fact that disgust leads to distancing and lowered evaluations suggests that feelings of disgust should impede the formation of a group identity; after all, group identities typically do not result from active avoidance and decreased liking of one another.

Research suggests, however, that emotional states can lead to heightened feelings of group identification and bonding – even when those emotions are negative (Fried, 1963; Tyhurst, 1951; Peterson and Martens, 1972). In particular, research has focused on the role of fear in connecting individuals. For instance, prior work demonstrates that not only do feelings of fear lead to increased bonding and identification with others, but fearful individuals actually anticipate and desire to form these connections and group identities (Schacter, 1959).

In the current research, we build on prior work to suggest that when individuals experience a disgust-inducing threat together, the properties of disgust will “contaminate” evaluations, leading to lowered liking as well as a lower desire to seek out connections with others. Importantly, however, we predict that the shared nature of the disgust experience will nevertheless result in increased identification and bonding with others. Thus, we predict a unique situation in which liking decreases, but group identification and bonding with other members of the group actually increases.

In study 1, groups of participants were randomly assigned to watch either a disgusting, scary, happy, sad or emotionally neutral film clip together. After watching the film clip, participants were asked to evaluate the clip and to evaluate and indicate the extent to which they identified with other members of the group. Results revealed that relative to participants in other conditions, participants in the disgust condition had less favorable evaluations of both the film clip they watched and of the other participants in their lab session. However, relative to the control and sadness conditions, participants in the disgust condition (along with those in the fear and happiness conditions) reported increased feelings of similarity and closeness with group members, and increased feelings of being connected and bonded.

In study 2, participants were primed with disgust, fear, sadness, happiness or control (neutral) before indicating whether they would prefer to watch an upcoming film clip alone or with other participants. The emotional content of the film clip was matched to condition (e.g., disgust condition participants watched a disgusting clip, fear participants watched a scary clip). Participants then watched the film clip together as a group, evaluated it, and indicated the extent to which they identified with other group members. Consistent with study 1 results, participants in the disgust condition reported less favorable evaluations of both the film clip and other participants in their lab session, but increased feelings of similarity/closeness, and of being connected and bonded. In contrast to those in the fear and happiness conditions, however, participants in the disgust condition expressed a higher preference for watching the film clip alone rather than with others. This suggests that although shared disgusting experiences can result in increased feelings of group identification, disgusted individuals do not anticipate or seek out such connections.

In study 3, we focus on examining the conditions under which disgust leads to group identification. This study was a 2 (jellybean flavor) by 3 (consumption setting) between-subjects design. Participants took part in a jellybean taste test where they were randomly assigned to evaluate either a peach (neutral condition) or vomit-flavored jellybean (disgust condition) before completing measures of group identification. Participants were assigned to complete the taste test in one of three settings: 1) all participants in the session were told together what jellybean flavor they would be tasting and then tasted the jellybean together 2) all session participants were told together what jellybean flavor they would be tasting but then tasted it separately and 3) each session participant was told individually what jellybean flavor he would be tasting and then tasted the jellybean alone. Results revealed that relative to the peach (neutral) condition, participants who tasted vomit jellybeans had lower evaluations of both the jellybean and the other session participants. Interestingly, tasting vomit jellybeans led to increased feelings of similarity and closeness only when the jellybeans were eaten together.

In study 4, we examine whether disgust has to be integral to the consumption in order to elicit the disgust identification effect. This study was a 2 (prime) by 2 (jellybean flavor) by 2 (consumption setting) between-subjects design. Participants first viewed a series of ads that were designed to prime disgust or neutral emotion. They then tasted either a peach or vomit-flavored jellybean in either a group setting (where everyone tasted the same flavor) or alone. Results replicated those of study 3 in that participants who tasted vomit jellybeans had lower evaluations of both the jellybeans and other participants relative to those in the peach (neutral) condition. Also consistent with study 3, tasting vomit-flavored jellybeans led to increased feelings of similarity and closeness only when the jellybean flavor was announced and eaten together. There was no effect of the prime, suggesting that disgust leads to feelings of group identification only when consumers actively share a disgusting experience.

Together, these studies suggest that although disgust's distancing tendencies keep individuals from liking and seeking out connections with others, feelings of group identification may arise nevertheless when consumers experience a disgust-eliciting threat together.

For more information contact: [acmorales@asu.edu](mailto:acmorales@asu.edu)

***Comfortably Numb: Relationships, Affective Numbing, & Consumption Enjoyment***

Lisa Cavanaugh, University of Southern California, USA\*

Jennifer Lee, University of Southern California, USA\*

Whether drinking a beverage at a café or trying products at the store, individuals often find themselves in the presence of others. As they consume, consumers are often reminded of relationships—including the relationships they *do not have* (Cavanaugh 2014). This research examines how reminders of lacking socially valued relationships (e.g., romantic relationships, close friendships) can pose a threat to the

self (i.e., threat to one's sense of worth or social standing) and how coping with such threat impacts what consumers experience, in terms of what they taste, feel, hear, and ultimately how they evaluate products.

Since relationships are commonly associated with heightened emotions (Yee, Gonzaga, and Gable 2014), one may presume that reminders of *not having* a relationship should also make one emotional. However, in a world where relationship reminders are frequent, one way in which consumers may cope with painful or threatening reminders that they lack a relationship is by creating emotional distance. Limiting emotionality can serve a self-protective function in making undesirable situations less painful (Baumeister, DeWall, and Vohs 2009). Thus, we propose that individuals may protect themselves from psychological pain associated with reminders of valued relationships through affective numbing.

If consumers cope with relationship reminders by avoiding emotions, they may also diminish their perceptual sensitivity to other emotional aspects of their consumption experiences, creating a paradoxical effect where positive experiences feel less pleasant and negative experiences feel less unpleasant. We find that consumers become affectively numb following a reminder of lacking a relationship, and they derive less enjoyment from positive consumption experiences and greater enjoyment from negative consumption experiences. Across six studies (lab and field) we provide evidence that relationship reminders in consumption environments influence enjoyment through affective numbing.

In *Study 1*, participants (N=89) were randomly assigned to a 2 relationship reminder (manipulated: control/romantic) x 2 partnership status (measured: single/in a relationship) between-subjects design. Participants viewed a set of magazine advertisements and were told that because we were interested in ad memory, some time needed to pass before asking questions about these ads (the cover story). In the interim period, they completed an unrelated product evaluation. Using an established relationship reminder manipulation (Cavanaugh 2014), ads reminded participants of relationships they either had or did not have. The advertisements were identical across conditions with the exception of the image featured. Romantic reminder ads featured images of romantic couples, while control condition ads featured images of products but no people. After viewing the ads, participants completed a product sampling task, where they tasted a chocolate truffle and assessed their consumption enjoyment.

A model predicting consumption enjoyment was estimated with relationship reminder, partnership status, and their interaction as predictors. This revealed a significant interaction of relationship reminder and partnership status ( $p < .05$ ). At baseline (control condition), single and coupled participants reported no difference in enjoyment. Coupled individuals across romantic and control conditions also reported no difference. However, when reminded of romantic relationships, singles reported significantly less consumption enjoyment than coupled participants ( $p < .03$ ) and singles in the control condition ( $p < .008$ ). Romantic relationship reminders caused singles to enjoy a product significantly less than both coupled individuals and singles not exposed to relationship reminders.

Using a different type of relationship (i.e., platonic friendship) and a different sensory modality (i.e., touch), *Study 2* (N=68) generalized the finding that reminders of not having a relationship significantly reduced consumption enjoyment relative to reminders of having a relationship ( $p < .0003$ ).

*Study 3* (N = 92) tested whether relationship reminders lead to the affective numbing we hypothesized using two measures (i.e., cognitive-emotional apathy and emotional blunting). Using the same design and procedure as Study 1, but with apathy as the outcome measure, participants rated their agreement with three items adapted from the Apathy Evaluation Scale (Marin, Biedrzycki, and Firinciogullari 1991). Analyses revealed that when reminded of romantic relationships they do not have, singles reported significantly more apathy than coupled participants ( $p < .02$ ) and singles in the control condition ( $p < .04$ ). No difference was found for coupled individuals across the romantic and control conditions or for singles and coupled individuals in the control condition. Using a second

validated procedure for assessing emotional blunting (Twenge et al. 2001), we again found that reminders of not having a relationship led to experiencing less emotion across valence (i.e., greater affective numbing).

If consumers who lack relationships are avoiding feeling, affective numbing should limit the pleasure extracted from pleasant and displeasure extracted from unpleasant experiences. *Study 4* demonstrates this effect to provide additional evidence for affective numbing. Participants (N=201) were randomly assigned to a 2 relationship reminder (manipulated: have/no longer have) x 2 product valence (manipulated: pleasant/unpleasant) between-subjects design. After recalling a friendship they had or no longer had, they completed a product evaluation, sampling either good (sweet) or bad (sour) orange juice (see Lee and Tsai 2014) and rating their consumption enjoyment. We found a significant interaction of relationship reminder and product valence ( $p < .0003$ ). For those sampling good orange juice, reminders of no longer having a friendship significantly reduced enjoyment compared to reminders of having a friendship ( $p < .02$ ). However, this effect actually reversed for those sampling bad orange juice, as reminders of no longer having a friendship significantly increased enjoyment compared to reminders of having a friendship ( $p < .006$ ). *Study 5* uses a conceptually similar setup and the sensory modality of sound to provide evidence of mediation through affective numbing (negative experience CI [.0154, .3966]; positive experience CI [-.3254, -.0037]).

*Study 6* demonstrates the robustness of our findings using a field study. Customers (N=64) exiting a campus Starbucks encountered a relationship reminder: a happy romantic couple (two confederates) situated in a romantic pose. Research assistants, posing as student government representatives unrelated to the couple, asked these customers to rate their enjoyment of their drink for a customer satisfaction survey. Singles reported significantly less enjoyment than coupled customers ( $p < .02$ ), regardless of drink type.

For more information contact: [lisa.cavanaugh@usc.edu](mailto:lisa.cavanaugh@usc.edu)

## ***Symposium: Flashing Forward: Antecedents and Consequences of Future-Self Connectedness***

**Chair:** Jacqueline Rifkin, Duke University, USA

### ***Who will I be tomorrow? How the valence of expected personal change affects future-oriented feelings and choices***

Sarah Molouki, University of Chicago, USA\*

Daniel M. Bartels, University of Chicago, USA

Hal E. Hershfield, University of California Los Angeles, USA

People are pervasively short-sighted, frequently making decisions in favor of short-term pleasures at the expense of their own long-term welfare. One reason for this is that they consider the needs of their future selves to be less important than their current needs and desires. In fact, people often think of their future selves as more akin to a completely different person rather than as a mere extension of who they are now (Pronin, Olivola, & Kennedy, 2008). In line with this idea, manipulations that increase the amount of expected personal change between the current and future self (thus decreasing perceived similarity) reduce feelings of future connectedness and increase discounting of future outcomes (e.g., Bartels & Urminsky, 2011).

However, is all change created equal? Although previous research has shown an effect of the magnitude of expected personal change on future-oriented behaviors, we explore whether the valence of the change described may also affect future orientation. One possibility is



that consideration of the future self is driven entirely by perceived similarity, and thus any significantly large change would cause a devaluation of future needs, regardless of valence.

An alternative hypothesis might be that the effect of change on future orientation is in fact moderated by the valence of change. For example, because people tend to expect and desire positive personal change over time, these types of changes may seem less threatening, leading to greater sense of self-continuity with, liking of, and consideration of the needs of the future self. Through a series of three studies, we find that expectations of positive change in fact reliably lead to greater future-oriented choices than expectations of negative change, and that this effect appears to be mediated by increased liking of a positive future self.

In an initial lab study, 81 participants imagined either positive or negative personality changes over the next year and were presented with a monetary choice involving a time tradeoff over the same time period. We found that participants in the positive change condition were more likely to make future-oriented choices by choosing larger-later options than those in the negative change condition,  $t(69) = 1.87, p = 0.066$ . Those in the positive (vs. negative) change condition also reported greater liking for the person they would be in one year,  $t(65) = 7.34, p < .001$ , as well as a perception that the person they would be in one year would be more capable,  $t(65) = 5.30, p < .001$ . Nevertheless, there was no difference in reported overlap and similarity between the current self and the self on one year based on valence condition,  $t(69) = 0.77, p = 0.44$ . This study provides initial evidence that people are in fact more considerate of the needs of positively (vs. negatively) changed future selves, and that this difference may be associated with increased liking.

In a follow-up study, we presented 241 participants in an online sample with a wider variety of hypothetical behavioral choices in various domains such as finance, health, and career, rather than using only a single monetary choice. In addition, we introduced a “no change” condition. This would allow us to pinpoint whether any difference in future orientation is driven by increased impatience in response to the prospect of negative change, increased patience in response to positive change, or both, as compared to a baseline state of no change. Participants were asked to imagine that in general, their personal characteristics would drastically change in a positive way, in negative way, or would remain stable over the next year. They were then asked to indicate the extent to which they would be likely to engage in various temporal tradeoffs.

We found an overall effect of the type of change imagined on a composite score of future orientation,  $F(2, 238) = 7.18, p < .001$ . In particular, those in the positive change and no change conditions showed equal levels of future orientation,  $t(238) = 1.19, ns$ , while those in the negative change condition showed significantly reduced levels of future orientation,  $t(238) = 2.49, p = .01$ . Those in both the positive and negative change conditions reported less similarity and less perceived overlap with their future self compared to the no change condition. However, whereas imagining positive change led to significantly greater liking of the future self than imagining no change, imagining negative change reduced liking of the future self, suggesting once again that liking may be a key driver of future-oriented choice.

In a final correlational study, we performed a mediational analysis to confirm whether the association between expected positive change and future orientation is indeed driven by liking rather than perceived similarity or overlap. One hundred and ninety-nine participants reported the degree of (positive or negative) change they expected on a series of personal characteristics over the next year. They then completed a single-item measure of future orientation as well as reporting measures of liking of and perceived overlap with the future self. We found that whereas liking positively mediated the relationship between expectations of positive change and future orientation (indirect effect:  $\beta = 0.047$ , bootstrap 95% CI = 0.019 – 0.231), a reduction in perceived overlap had a negative suppression effect on the relationship between positive change and future orientation (indirect effect:  $\beta = -0.035$ , bootstrap 95% CI = -0.174 – -0.013). This suggests that the relationship between positive change and future orientation is indeed driven by liking, which is strong enough to overcome the negative effect of reduced similarity.

In conclusion, we find that expectations of negative, but not positive, change appear to have a deleterious effect of future orientation. Although both positive and negative changes may lead to reduced perceptions of overlap and similarity with future selves, the effect on future-oriented choice is mitigated for positive change by increased liking for the future self. In contrast, expectations of negative change lead to both decreased overlap and decreased liking, which appears to be a particularly harmful combination if we intend for people to be more considerate of their own future needs.

For more information contact: s.molouki@chicagobooth.edu

### ***The Trouble with Trying it All: When Variety Decreases Future-Self Connectedness***

Jacqueline Rifkin, Duke University, USA\*

Jordan Etkin, Duke University, USA

The variety-seeking advice “*When in doubt, try a little of everything!*” is frequently offered as a way to optimize a decision. Indeed, consumer researchers have identified diverse motivations for variety-seeking, including uncertain preferences (Kahn & Lehmann, 1991; Kreps, 1979; Read & Loewenstein, 1995), deciding for the future (Salisbury & Feinberg, 2008; Simonson, 1990), and impression management (Ratner & Kahn, 2002; Sela & Maimaran, 2015). However, it is still unclear whether this advice is *good* advice—that is, scant research has considered the long-term psychological consequences of variety-seeking. Our research examines the impact of variety-seeking on perceived connection with the future self, and in particular, when the perception of greater variety in personal consumption choices negatively impact future-self connectedness.

Variety-seeking is a common consumption behavior that can signal information about the chooser’s preferences. For example, work shows that variety-seeking can signal that the chooser is more thoughtful (Choi, Kim, Choi, & Yi, 2006), interesting (Ratner & Kahn, 2002), and key to our research, has weaker domain-specific preferences (Sela & Maimaran, 2015). In this research, we propose that variety-seeking in personal consumption choices self-signals weak domain-specific preferences, which can challenge consumers’ beliefs that the aspects that define them will persist into the future (i.e., future-self connectedness; FSC; Bartels & Urminsky, 2011). Research shows that consumers with unclear self-concepts (i.e., low Self-Concept Clarity; SCC; Campbell, Trapnell, Heine, Katz, Lavalley, & Lehman, 1996) are particularly reliant on external cues to inform the self (e.g., Morrison, Johnson, & Wheeler, 2012; Slotter & Gardner, 2010), suggesting that these consumers’ future-self connectedness (FSC; Bartels & Urminsky, 2011) will be more influenced by perceived preference strength. Thus, although choosing (and perceiving) greater variety in personal consumption always signals weak domain-specific preferences, we predict that only for consumers with low SCC will these weak preferences cause a decline in future-self connectedness.

In Study 1, we manipulated the actual variety of grocery-shopping choices using Simonson (1990)’s choice architecture paradigm. 211 participants chose three days’ worth of groceries either *simultaneously* (1 decision in 1 day) or *sequentially* (3 decisions over 3 days). As expected, participants chose more variety when choosing simultaneously (the “high variety” condition) versus sequentially (the “low variety” condition). Participants then completed the SCC scale (Campbell et al., 1996) and a 3-item measure of FSC (Bartels & Urminsky, 2011). After controlling for age, we found the predicted interaction of variety condition and SCC on FSC ( $B = .021, p = .049$ ). Among people with lower SCC, those who made more (vs. less) varied grocery choices subsequently felt less connected to their future selves.

In Study 2, we replicated this interaction in the field while holding choice timing constant. 120 participants selected granola bars from three bowls containing three granola bar flavors. In the *high-variety* condition, the three bowls were organized by flavor; in the

*low-variety* condition, the three bowls contained mixed assortments of each flavor (adapted from Kahn & Wansink, 2004). Confirming the manipulation, participants chose significantly greater flavor variety in the ‘organized’ condition than in the ‘mixed’ condition. Then, we collected SCC and FSC. After controlling for age, we found the predicted interaction of variety condition and SCC on FSC ( $B = .033$ ,  $p = .071$ ). Consistent with study 1, among participants with lower SCC, those who made more (vs. less) varied granola bar choices felt less connected to their future selves.

In Study 3, we held the choice constant and manipulated only the perceived variety of consumption choices. 161 participants created a 10-song music playlist from a bank of 20 songs, and were randomly assigned false feedback indicating that their playlist was either *more* or *less* varied than the majority of previous participants’ playlists. Then, we collected SCC and FSC. After controlling for age, we found the predicted interaction of variety condition and SCC on FSC ( $B = .028$ ,  $p = .024$ ), such that among participants with lower SCC, those who perceived more (vs. less) variety in choice felt less connected to their future selves. Therefore, regardless of actual choice, the perception of greater variety in consumption choices is what makes consumers with low SCC feel less connected to their future selves.

In Study 4, we manipulated SCC and examined the mechanism underlying these effects. After completing a writing manipulation previously shown to impact SCC (Hogg et al., 2007), 101 participants completed the perceived variety manipulation from study 3. Then, we collected FSC and measured the strength of participants’ song preferences. After controlling for age, we found the predicted interaction of variety and SCC conditions on FSC [ $F(1,96) = 3.78$ ,  $p = .055$ ]. As predicted, in the low SCC condition, participants who perceived their playlists as more varied had lower FSC than those who perceived their playlists as less varied [ $F(1,96) = 2.88$ ,  $p = .093$ ]. By contrast, in the high SCC condition, FSC did not differ across perceived variety conditions [ $F(1,96) = 1.16$ ,  $p > .28$ ]. Furthermore, as expected, this interaction was driven by the perception of weak song preferences. Moderated mediation analysis suggests that while high variety always signals weak domain-specific preferences, only those with low SCC interpret weak preferences as an indicator of lower FSC.

Across several consumption domains, these four studies demonstrate that consumers with low SCC feel less connected to their future selves when they choose (or perceive) greater variety in their personal consumption choices. This research contributes not only to the literature on FSC by examining a novel antecedent of future-self connectedness, but also to the literature on variety-seeking, by highlighting a downside of “trying a little of everything.”

For more information contact: [jacqueline.rifkin@duke.edu](mailto:jacqueline.rifkin@duke.edu)

### ***Understanding the “Self” in Self-Control: The Effects of Connectedness to Future Self on Goal Setting and Striving***

Oleg Urminsky, University of Chicago, USA

Daniel M. Bartels, University of Chicago, USA\*

The exercise of self-control involves setting priorities and adhering to plans, even in the face of immediate temptations. Many decisions requiring self-control (weight loss, quitting smoking, saving money, medical treatment compliance, etc...) involve trading off consumption or happiness in the present or immediate future with consumption or happiness in the distant future. We posit that a crucial variable in such decisions is how a person views her distant future self (i.e., as a different person from her current self or as fundamentally the same person, Bartels & Urminsky, 2011). In five studies, we show that how people view their future selves influences intertemporal preferences.

A decision maker is more closely linked to the person she will be tomorrow than to the person she'll be in 10 years, in terms of self-defining psychological properties, such as beliefs, values, and ideals. For this reason, she may prefer to allocate benefits to her more connected, sooner self at the expense of her less connected, later self. We propose that when people feel less psychologically connected to their future selves (e.g., because they foresee significant changes to the self), they will be less motivated to forego immediate benefits to provide long-term benefits for that future self.

In Study 1, we tested the effect of connectedness on making plans. Graduating seniors (N=105) in the high connectedness condition were given the more fluent task of listing two reasons why they would remain the same in the future (vs. 10 reasons in the low connectedness condition) indicated that they would allocate significantly more of their resources to those budgetary categories that they themselves separately judged to be the most responsible uses of money, suggesting a higher motivation to provide for the future self when planning.

In Study 2, participants (N=58) listed New Year's resolutions after having induced feelings of high or low connectedness and completed a follow-up survey several months later. Participants in the high connectedness condition chose more far-sighted resolutions (i.e. self-rated as more practical and less about enjoyment), on average, than did participants in the low-connectedness condition. Controlling for the types of resolutions made, the participants in the high-connectedness condition reported significantly more success in keeping their New Years resolutions than did participants in the low connectedness condition. This effect was driven by the high connectedness participants' ability to sustain effort on their far-sighted, hard-to-maintain resolutions.

In Study 3, we investigated the effect of connectedness on individual choices, and identified awareness of future consequences as a key moderator, similar to Bartels and Urminsky (2015). Visitors to a museum (N=251) chose between a low calorie snack and a high calorie snack as compensation for having filled out a survey. In a 2x2 design, we manipulated both connectedness (via a reading passage that described either change or stability in identity over time) and whether long-term health consequences of food choices were highlighted (via a reminder question about future regrets or a control question about brand awareness). We also measured participants' BMI. Among healthy-range BMI individuals, we find no effect of reminders or connectedness on food choices. Similarly, when overweight participants were not reminded to consider future regrets, there was no effect of connectedness on choices. However, when overweight participants (who are more likely to have set weight loss goals) were reminded to consider future regrets, significantly fewer calories were chosen in the high-connectedness condition, compared to the low-connectedness condition.

In Study 4, we recruited non-athlete undergraduate participants (N=188) during the school year and measured their connectedness to their future self, as well as BMI, and secured permission to access their gym attendance records. First, we found that participants higher in connectedness had significantly lower BMI. Second, among normal-range BMI participants, measured connectedness did not correlate with gym attendance. However, among overweight participants, those higher in connectedness visited the gym significantly more often throughout the school year.

In Study 5, we investigated dehumanization (Haslam & Bain 2007) as a potential process by which connectedness affected concern about long-term consequences. Adult participants (N=44) first rated their connectedness to their future self, then completed an exercise which measured their dehumanization of their future self. Lastly, they made choices in a series of health tradeoffs, between present discomfort and long-term health benefits. Participants who felt disconnected from their future selves were significantly more likely to "dehumanize" the future self. High connectedness between present and future selves and low dehumanization of the future self each significantly predicted people's willingness to endure pain in the present in order to reduce the likelihood of negative health states experienced in old age. Dehumanization significantly mediated the effect of connectedness on health scenario choices.

Our findings demonstrate that how we think of our future selves plays a fundamental role in how we approach self-control dilemmas and make tradeoffs between immediate temptations and long-term benefits.

For more information contact: bartels@uchicago.edu

### ***How does future income affect present consumption? The role of future self-continuity***

Anja Schanbacher, London Business School, UK\*

David Faro, London Business School, UK

Simona Botti, London Business School, UK

How does future income affect present consumption? Economic theory (Friedman, 1956) posits that consumers anticipate lifetime earnings and maximize utility by spreading consumption evenly across the lifespan. Consequently, relative to someone expecting no income change, a person who expects her income to increase in the future should increase present consumption and someone who expects income to decrease in the future should reduce it. However, empirical evidence of such consumption smoothing is inconsistent (e.g. Wilcox, 1989). Explanations for observed lack of consumption smoothing have focused on economic aspects, such as liquidity constraints (Wilcox, 1989).

Taking a psychological approach, we propose that future income is more likely to influence present spending when consumers perceive high future self-continuity – i.e., when they feel psychologically connected to their future self (Bartels & Urminsky, 2011; Hershfield, 2011; James, 1890). In line with related research (Bartels & Urminsky, 2015) we examine spending on indulgences, such as a specialty coffee or an improved laptop. We argue that people spontaneously perceive higher self-continuity in the case of a future income decrease (vs. increase). This is based on the argument that self-continuity is higher when the mental representation of the future is more vivid (Tierney et al., 2014), and negative changes are more vivid than positive changes because they are naturally more emotionally charged (Baumeister et al., 2001) and lead to more extensive imagination (Bilgin, 2012). Thus, consumers should show decreased likelihood of spending on indulgences when expecting an income reduction, but should be less likely to increase such purchases when expecting an income increase. Enhancing the sense of future self-continuity should attenuate this asymmetry, leading to an increased likelihood to spend among consumers expecting an income increase.

Study 1 tested the prediction that purchases of indulgences are more likely to be affected by future income decreases than by increases. We varied current and future income in a scenario and examined the effect of future income on desire to purchase indulgences at present. Specifically, participants imagined being a student who either lives on a low income, or receives generous financial support and lives on a high income. Participants (N=125) further imagined that graduates from their course of study typically earned a high or low income. We found that among participants with high present income, the expectation of a decrease reduced the desire to buy, compared to the expectation of no change. However, among participants with low present income, desire to buy did not differ between those expecting no change and those expecting an increase.

Study 2 manipulated the direction of the future income change independent of current income and included a test of the proposed process. Starting from their actual current income, participants imagined an increase or decrease in three years, or unchanging income. Participants (N=238) either read a brief description of their future financial situation (low vividness) or were additionally encouraged to imagine their future vividly with the help of images (high vividness). Vividness was intended to increase future self-continuity by intensifying emotional response (see Loewenstein, 1996). Participants then rated their likelihood to buy indulgences at present. The low-vividness condition replicated the results from Study 1: Compared to no change, consumers were less likely to buy when expecting

an income decrease but were equally likely to buy when expecting an increase. In the high-vividness condition, however, expectation of an income decrease lowered, and importantly, expectation of an increase heightened the likelihood to buy.

Study 3 used an identity continuity prime to manipulate self-continuity. Participants (N=262) completed a task requiring them to focus on either stability (high continuity) or change (low continuity) in identities of brands. This was intended to prime self-continuity, as brands are commonly perceived to have human qualities (Aaker, 1997; Van Rekom et al., 2006). In an ostensibly unrelated survey, subjects were then presented with income scenarios and buying opportunities as in Study 1. The low continuity condition replicated the results from Study 1: among participants with high current income, those expecting a decrease reported lower likelihood to buy than those expecting no change; among participants with low current income, those expecting an increase were equally likely to buy as those expecting no change. In the high continuity condition, participants with high current income who expected a decrease were again less likely to buy than those expecting no change. Importantly, in support of our predictions, here a future income increase (compared to no change) raised the likelihood to buy when current income was low.

Study 4 examined natural variation in future income and real choice. Student participants (N=134) were assigned to a high- or low-continuity condition. We manipulated future self-continuity by presenting a passage stating that people's core identity changes (low continuity) or is stable (high continuity) around university graduation (adapted from Bartels & Urminsky, 2011). Next, participants completed measures of current income and expected income after graduation. Participants then made several hypothetical choices between basic and indulgent purchasing options (e.g. basic vs. gourmet meal). In addition, we informed participants that they would be entered into a lottery for a gift certificate and asked them to indicate their preference for a massage voucher (indulgence) or groceries voucher (necessity). On the hypothetical as well as on the behavioral measure, future income was positively related to the likelihood of choosing the indulgent options in the high, but not in the low self-continuity condition.

Previous research has linked increased self-continuity to reduced present spending. This research examined how future self-continuity affects the weight given to long-term *outcomes* in financial decisions (future monetary rewards or costs; Bartels & Urminsky, 2011; Hershfield, 2011). We provide evidence that future self-continuity moderates the impact of future *income* on present consumer decisions. In doing so, we show that increased self-continuity can boost present spending on indulgences in the case of future income increases.

Our findings suggest that people expecting significant income increases in the future may excessively restrict present consumption based on a lack of future self-continuity. The findings have implications for public policy as well as consumer welfare.

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

## ***Individual Papers: Sampling and Experiences***

### ***Loss of Sweet Taste: The Gustatory Consequence of Money***

Feng Sheng, Peking University, China\*

Jing Xu, Peking University, China

Baba Shiv, Stanford University, USA

Human beings have evolved to be sensitive to a variety of rewards. Primary rewards, such as those found in gustatory stimuli (e.g. glucose), satisfy biological needs for survival. Secondary rewards, such as money, do not supply physiological substances, but are

rewarding because of their instrumental roles in acquiring primary rewards. Although research has demonstrated that primary and secondary rewards motivate behavior in similar ways (see Sescousse et al. 2013 for a review), whether and how the processing of these two types of rewards interfere with each other are still open questions. In the current research, we sought to examine the interaction between the processing of primary and secondary rewards, namely, gustatory and monetary rewards.

Research in neuroscience has shown that gustatory and monetary rewards share overlapping neural substrates, which suggests that the two systems are intertwined. For instance, neuroimaging studies found that the orbitofrontal cortex responded not only to gustatory rewards (e.g., glucose; O'Doherty et al. 2002), but also to monetary ones (Chib et al. 2009). Other work has shown that a group of neurons located at the ventral medial prefrontal cortex, a brain area adjacent to orbitofrontal cortex, responded similarly to both food and money rewards (McNamee et al. 2013). Therefore, in terms of neural representations, handling money is analogous to consuming food.

Behavioral evidence also suggests the interweaved processing of monetary and gustatory stimuli. Briers and colleagues (2006) found that striving for money increased the motivation to consume calories. Wadhwa, Shiv, and Nowlis (2008) showed that appetite could be quelled simply by receiving a dollar. Most relevant to the current work, Quoidbach and colleagues (2010) demonstrated that exposure to money caused people to savor and enjoy eating a piece of chocolate less than otherwise. Taken together, these findings revealed the reciprocity between monetary and gustatory desires—but from a primarily motivational perspective. Given the overlap between neural substrates for money and food, we reasoned that the interference between the valuation of monetary and gustatory stimuli might also occur at the perceptual level. Specifically, prior research has found that repetitive firing of a common neural population attenuates functioning (Henson et al. 2004). Therefore, we hypothesized that handling money would temporarily impair sensitivity to gustatory rewards (e.g., sugar) and that the degree of impairment depends on the extent to which money is perceived as rewarding (i.e., valuable).

Experiment 1 investigated whether handling money would temporarily impair gustatory sensitivity to detect primary rewards. Furthermore, this experiment also investigated whether the effect was moderated by valuation of money. Specifically, participants counted either a stack of bills or a stack of paper. Next, participants completed a modified Harris-Kalmus's protocol (Harris and Kalmus 1954), which measured sucrose thresholds by asking participants their sensitivity to different concentrations of sucrose solutions. Last, participants completed the 18-item Materialism Values Scale (Richins and Dawson 1992) as a proxy for valuation of money.

As predicted, after counting money, participants' thresholds of sucrose detection were positively correlated with their valuation of money (i.e., the higher materialism score, the higher the sucrose threshold). However, after counting paper, no correlation was found between materialism scores and sucrose thresholds. Therefore, we found that counting money not only desensitized the detection of sweet stimuli (i.e., sugar), but that this effect was moderated by people's valuation of money.

Experiment 2 further examined the causal relationship between value of money and sensitivity to sugar by manipulating participants' valuation of money. A revised version of the Implicit Association Test (IAT, Greenwald et al. 1998) was used to manipulate participants' lexical association between money and value. Specifically, participants were asked to classify pictures on screen as either money or postcard by pressing one of the two assigned buttons and classify words as either high or low value by pressing one of the two same buttons. Thus, participants matched money with either high or low value, depending on condition. After manipulating valuation of money, participants counted a stack of bills and then completed the same sucrose sensitivity task as in experiment 1. Results showed that participants who matched money with high value words, versus low value words, registered higher sucrose thresholds (lower sensitivity). These finding replicated the results of our first experiment.

Experiment 3 examined whether counting money impairs sensitivity to sweet stimuli (i.e., sugar) exclusively or gustatory function in general. Thus, we investigated the effect of handling money on bitterness thresholds, using a quinine sulfate solution. All experimental

protocols were the same as those in Experiment 2, except that the sucrose solutions were replaced by quinine ones. Results showed that conceptually associating money with either high value or low value had no effect on sensitivity to bitterness after counting money.

Taken together, our work demonstrated the novel effect that money interferes with the functioning of the human gustatory system. Specifically, handling money desensitized a person to gustatory rewards (but not punishments) by elevating sensory thresholds. Moreover, we showed that the valuation of money moderated the effect, which further suggests that money influences the gustatory perceptions through the reward system. Our work is the first, to our knowledge, that measures the impact of money on the sensitivity of the gustatory system and sheds light on the functioning of the reward system across domains.

For more information contact: sheng@pku.edu.cn

### ***Reminders of Money Weaken the Need for Caffeine***

Jannine D. Lasaleta, Grenoble Ecole de Management, France\*

R. Dustin Harding, Grenoble Ecole de Management, France

Reza Movarrei, Grenoble Ecole de Management, France

Kathleen D. Vohs, University of Minnesota, USA

To say that energy enhancers are popular is an understatement. Caffeine, the most common energy enhancer, has been labeled the world's most popular drug (Reid, 2005). Many consumers use energy enhancers to help them achieve their goals and complete tasks.

To say that money is useful for achieving goals and completing tasks is another understatement. Money has been called the world's most useful tool (Lea & Webley, 2006) and most commonly is given out in return for competent performance.

Past work has found that reminders of money cause people to be motivated and energized to accomplish one's own goals (e.g., Mogilner, 2010; Vohs et al., 2006; Zhou, Vohs & Baumeister, 2009). Given that consumers often turn to energy enhancers to aid goal pursuit, we posited that reminders of money could offset the need for or interest in consuming energy enhancing products. If so, then perhaps money primes would decrease the desire for energy enhancers, such as caffeine. This prediction was tested and supported in four experiments.

We also formed a mediation hypothesis. Prior work has shown that people who have been experimentally reminded of money report that they feel stronger, more competent, and more efficacious (Mukherjee, Manjaly, & Nargundkar, 2013; Zhou et al., 2009). We hypothesized that feelings of self-efficacy would underlie the relationship between money primes and desire for energy products, a prediction tested in experiments 3 and 4, and found to have support.

Experiment 1 investigated whether reminders of money decreased the interest in consuming caffeinated products. Specifically, participants played a counting game involving either dollar bills or bricks then read a description of an energy enhancer, caffeinated jellybeans. Next, they were asked to imagine that they were about to start a full day of classes and exams and then indicated how many caffeinated jellybeans they would take throughout the day (adapted from Ilyuk, Block, & Faro, 2014). Results showed that, as expected, money primed participants indicated they would consume fewer jellybeans than did neutral participants.

This experiment also measured mood to test the alternate explanation that the predicted results could be accounted for by positive affect. As expected, the results revealed no differences in mood.



Experiment 2 replicated our effect. Crucially, we tested our hypotheses in the context of real consumption behavior. Participants came into the lab and assembled either money or fish puzzles then read a description of caffeinated gummy bears. Next, they were told they would begin a difficult counting task and were given the opportunity to eat the caffeinated gummy bears throughout the task. As expected, money primed (versus neutral) participants consumed fewer caffeinated gummy bears during a difficult counting task.

Experiment 3 demonstrated the specificity of our effect. We tested whether reminders of money decrease the desire for energy enhancers in general, or whether the effect only occurs when having more energy would be beneficial to task performance. According to our theory, exposure to money makes energy enhancers less desirable because people feel they are more capable of completing tasks than otherwise. However, this effect should only happen when having more energy can improve task performance. Thus, we reasoned that money priming only decreases energy enhancer consumption when having more energy is beneficial to the task at hand. When having energy does not benefit the task, then money priming should have no effect.

Hence, experiment 3 manipulated whether an energy product was perceived to be beneficial to task performance. Participants first completed either a money or seashell puzzle then imagined they were preparing for a mentally strenuous task (i.e., a day full of classes and exams, as in experiment 1). Next, participants read a description of an energy-enhancing product, caffeinated jellybeans, that could boost mental and physical energy, or physical energy only. Thus, only the first type of jellybean was beneficial to the mentally strenuous task. The key outcome was how much of the product they would want to consume. Results revealed an interaction between money prime and product type: When the product was beneficial to mental energy, money-primed participants desired fewer energy enhancers than neutral-primed participants. However, when the product was not beneficial to mental energy (i.e., the physical energy only jellybeans), there was no difference between conditions.

Experiment 4 investigated the differential effects of money on the desire for two supplements: energy enhancers and relaxants. Energy enhancers are one type of supplement often considered beneficial to task performance (e.g., people often drink coffee throughout a long workday). Relaxants are another type of supplement that, in contrast, are considered detrimental to many of the same tasks energy enhancers are thought to aid. If money priming does indeed increase self-efficacy, then the desire for energy enhancers should decrease. However, we predicted the opposite effect for relaxants. We reasoned that money-primed surges in self-efficacy should weaken the perception that relaxants interfere with performance, therefore increasing the desire for them.

To test these predictions participants assembled a money or seashell puzzle and then viewed a product (gummy candy) that was posed as either an energy enhancer or an energy-suppressing relaxant. Next, participants reported how many pieces of the product they would consume throughout a day of school exams and classes. Results revealed a money prime by product type interaction. Participants primed with money, versus neutral, images indicated they would consume fewer energy enhancers (a replication of our basic effect). In contrast, we found the opposite effect for relaxants—participants primed with money indicated they would consume more relaxants than those primed with neutral images.

In sum, these experiments demonstrated that exposure to money decreases the desire for energy enhancers. The experiments further revealed that this effect only occurs when an energy enhancer is beneficial to task performance (experiment 3) and reverses for supplements detrimental to task performance (experiment 4). Additionally, these experiments ruled out alternative explanations of affect. These findings not only introduce a unique consequence of reminders of money, but also elucidate the relationship among self-efficacy, caffeine consumption, and in turn, consumer well-being.

For more information contact: [rex.harding@grenoble-em.com](mailto:rex.harding@grenoble-em.com)

## *Can Shape Symbolism Be Used to Manage Taste Expectations?*

Fei Gao, HEC Paris, France\*

Tina M. Lowrey, HEC Paris, France

L. J. Shrum, HEC Paris, France

Crossmodal correspondence is when attributes in one sensory modality are matched with attributes in another sensory modality (Spence, 2011). Recently crossmodal correspondences between abstract shapes and tastes, which are also referred to as shape symbolism, in the food and beverage industry have been shown (see Spence, 2012, for a review). For example, people tend to match rounded shapes with smooth-tasting still water and juice, while matching more angular shapes with carbonated sparkling water (Gallace & Spence, 2011; Ngo, Piqueras-Fiszman, & Spence, 2012; Ngo et al., 2013); and match sweet milk chocolate with rounded shapes, while matching bitter dark chocolate and acidic cheese with more angular shapes (Ngo, Misra, & Spence, 2011; Spence, Ngo, Percival, & Smith, 2013). Some researchers contend that the appropriate use of the shape-taste correspondences on food and beverage packaging can help set up the right taste expectations in the minds of consumers (Spence, 2012; Spence & Ngo, 2012). Further, they consider that this approach to setting consumers taste expectations may operate at a more implicit level. If so, marketers and graphic designers in the food and beverage industry may be well advised to set up appropriate taste expectations through shapes displayed on the packaging. However, the above contention is just a speculation, and almost no empirical evidence to support it exists currently. Therefore, we conducted three experiments to examine whether packaging designed on the basis of shape symbolism can induce corresponding taste expectations, and whether this effect is mainly driven at an implicit level or even exists at a subliminal level.

Experiment 1 examined the effects of shape symbolism at an explicit level using word association. We presented two beverage packages with angular or rounded labels to participants and asked them to write down the associations concerning the products. We found that among the five most-mentioned terms, three belong to the taste category, and the reported frequencies of these three terms were significantly different between the packaging with angular labeling and the packaging with rounded labeling (“carbonated” – 58 vs. 5, “smooth” – 0 vs. 39, “sweet” – 10 vs. 53), all  $ps < .05$ , suggesting that angular labeling is more likely to induce carbonated expectation, while rounded labeling is more likely to induce smooth and sweet expectations. However, there was no significant difference between the number of people who reported the target terms and who did not, all  $ps > .05$ , suggesting that people’s taste expectations are indeed affected by the shapes, but they may not well realize it at an explicit level.

Experiment 2 examined the effects of shape symbolism at an implicit level using the Implicit Association Test. This is a computer-based experiment and consists of seven blocks. Block 1 and 2 were learning tasks, through these two learning tasks we artificially set up an association between angular and carbonated and an association between rounded and smooth, which were assumed to be congruent with consumers’ implicit expectations. Block 3 was a practice task and block 4 was the formal test. Block 5 was the reversal of block 1. The aim of the reversal was to artificially set up an association between rounded and carbonated and an association between angular and smooth, which were assumed to be incongruent with consumers’ implicit expectations. Block 6 was a practice task and block 7 was the formal test. We found that participants’ reaction times in block 4 ( $M=626.94$ ,  $SD=77.40$ ) were significantly shorter than those in block 7 ( $M=703.32$ ,  $SD=100.56$ ),  $t(30) = -4.105$ ,  $p < .05$ , suggesting that the artificially-set “angular labeling or carbonated drinks/rounded labeling or fruit juice” classification tasks are indeed congruent with participants’ implicit expectations, while the artificially-set “rounded labeling or carbonated drinks/angular labeling or fruit juice” classification tasks are incongruent with participants’ implicit expectations. Thus, we can conclude that the effects of shape symbolism on taste expectations exist at an implicit level.

Experiment 3 further explored and compared the effects of shape symbolism on taste expectations between subliminal and supraliminal levels using a masking paradigm. This is also a computer-based experiment and consists of four blocks. In blocks 1 and 2, each trial was displayed along a mask – priming stimulus (i.e., packaging with angular or rounded labels) – mask sequence and then participants were

asked to make a response when they saw a carbonated drink or a fruit juice. The durations of priming stimuli in block 1 (12 ms, subliminal level) and block 2 (112 ms, supraliminal level) were different. Blocks 3 and 4 were used to check whether participants can accurately perceive the priming stimuli hidden in the masks at both subliminal and supraliminal levels. In these two blocks, each trial was also displayed along a mask – priming stimulus – mask sequence and then participants were asked to figure out which types of labels were displayed and to have a guess if they could not see anything. First, we found that under the subliminal priming condition, participants' correct perception rate to priming stimulus was 0.52 which was at chance level, while under the supraliminal priming condition participants' correct perception rate was 0.92 which was significantly higher than chance level, suggesting that our manipulation of subliminal and supraliminal priming was successful. Further, we found that when priming stimulus was congruent with target stimulus (i.e., angular labeling – carbonated drink, rounded labeling – fruit juice), participants' reaction times ( $M = 655.57$ ,  $SD = 24.82$ ) were significantly shorter than those of the incongruent condition (i.e., angular labeling – juice, rounded labeling – carbonated drink) ( $M = 670.97$ ,  $SD = 25.64$ ),  $F(1,28) = 5.21$ ,  $p = .03 < .05$ ), suggesting that abstract shapes indeed can induce corresponding taste expectations. Moreover, the priming effects of shapes on taste expectations had no significant difference between subliminal and supraliminal levels,  $F(1,28) = 0.56$ ,  $p = .461 > .05$ , suggesting that the effect of shape symbolism on taste expectations is mainly driven at an implicit level and even exists at a subliminal level.

In sum, our findings advance current research on shape symbolism by demonstrating that abstract shapes can induce specific taste expectations and by uncovering the inducing mechanism of this effect.

For more information contact: fei.gao@hec.edu

### ***The Impact Of Sample Location On Post-Sampling Desire For The Target Product***

Yanping Tu, University of Florida, USA\*

Christopher Hsee, University of Chicago, USA

Providing product samples is a common marketing practice. For example, Amazon.com invites consumers to “click to look inside” for sample pages; Godiva offers registered chocolate aficionados free chocolate samples. Samples (e.g., a few pieces of M&M's) could be presented physically inside (e.g., from inside a pack of M&M's) or outside (e.g., in a sampling cup) the target product (e.g., a pack of M&M's). Does the physical location of a sample matter in terms inducing consumers' post-sampling desire for the target product? Normatively, it should not because consumers receive objectively the same samples. However, psychologically, we predict that, consumers will perceive their sampling experiences differently, which in turn influences their post-sampling desire for the target product.

Our theory comprises two causal links. One is from Sample Location to Perceived Sample-product Overlap (i.e., the perceived overlap between the sampling experience and the target product experience). The other is from Perceived Sample-product Overlap to Desire for the Target Product. Specifically, building on research on how people mentally represent object relationship (Kosslyn, Ball, and Reiser 1978; Shepard and Metzler 1971), we propose that, when a sample is physically inside the target product (i.e., inside sample), consumers would perceive the sampling experience to be a part of the target product experience and thus the perceived sample-product overlap is high. Conversely, when the sample is physically outside the target product (i.e., outside sample), consumers would perceive the sampling experience to be separate from the target product experience, and thus the perceived sample-product overlap is low.

Further, building on research showing that consumers disengage from target activities after taking part in a few related actions because they feel they have (partially) completed the target activities (Dhar and Simonson, 1999; Fishbach and Dhar 2005; Laran and

Janiszewski 2009), we propose that greater perceived sample-product overlap will give consumers a stronger sense that they have (partially) experienced the whole product (“I have been there” or “I have done that”), resulting in lower desire to experience it “again”.

Four studies lent support to our framework. Study 1 tested the basic effect, adopting a 2 (location: inside vs. outside) between-participants design and using a pack of postcards as the target product. We had participants sample postcards, one by one. We either placed the postcards inside the package so that participants took them from the package (inside condition), or on the table so that participants picked them up from the stack (outside condition). After this sampling procedure, we measured participants’ desire to own, and willingness to pay for a pack of postcards, and whether they would choose it as a lottery gift (as oppose to \$2 cash). We found participants in the outside (vs. inside) condition reported stronger desire to own (3.42 vs. 2.69,  $t(97) = 2.51$ ,  $p = .014$ ), and higher willingness to pay for (6.41 vs. 4.58,  $t(97) = 2.13$ ,  $p = .036$ ) the postcards, and choose it as a lottery gift more often (30% vs. 12%;  $\chi^2(1) = 4.65$ ,  $p = .031$ ).

Study 2 ruled out the potential alternative explanation that the outside (vs. inside) presentation format is inherently more positive, by showing that the sample location effect only holds when the presented material provides partial product experience (i.e., when there is a certain degree of sample-product overlap to begin with). We used a 2 (location: inside vs. outside)  $\times$  2 (stimulus: sample vs. non-sample) between-participants design, and a painting album as the target product. In the sample (vs. non-sample) condition, participants viewed two sample paintings (vs. non-painting pages). In the inside (vs. outside) condition, the pages were shown in an opened album (vs. shown as separate pages next to a closed album). We then had participants click a button to load and view the whole album, but set the loading procedure to always fail. We used the number of attempts to load (and view) the whole album as a proxy of desire, and found that, among participants who viewed samples, inside condition led to fewer attempts than outside condition (.24 vs. .74,  $t(78) = 2.53$ ,  $p < .05$ ); whereas among participants who viewed non-sample pages, attempts did not differ (.62 vs. .62,  $t(78) < 1$ , ns.).

Study 3 used a causal chain design to test the proposed mechanism. Study 3a used a 2 (location: inside vs. outside) between-participants design to test the first link, from Sample Location to Perceived Overlap. Participants viewed sample paintings (displayed inside vs. outside the target album) and indicated perceived sample-product overlap on a Venn-diagram measure, with one large circle representing “Viewing the whole album” and a small circle representing “Viewing the samples,” and varied the degree of overlap between these two circles from small (denoted as 1) to large (denoted as 7). As predicted, participants in the inside (vs. outside) condition indicated higher perceived sample-product overlap (4.47 vs. 3.32,  $t(67) = 2.35$ ,  $p < .05$ ). Study 3b used a 2 (perceived overlap: high vs. low) between-participants design to test the second link, from Perceived Sample-product Overlap to Desire for the Target Product. We imposed high (vs. low) perceived overlap via both verbal and pictorial information on participants, before they viewed sampling paintings. We then measured their desire to view the whole album using the same behavior measure as in study 2. We found that participants in the high-perceived-overlap (vs. low-perceived-overlap) condition attempted fewer times (.52 vs. .92,  $SD = 1.24$ ;  $t(136) = 2.21$ ,  $p < .05$ ).

Study 4 extended the sample location effect 1) to food domain, using a pack of M&M’s as the target product, and 2) to indirect, imagined sampling experience (i.e., watch a video in which a person is sampling M&M’s), and found support to our theory.

Sampling experiences are designed to “tease”—to whet consumers’ appetite. But they may also “dry up” consumers’ appetite by making them feel “I have already tried the target product”. We show that the “dry up” effect is stronger for inside (vs. outside) samples, because inside samples lead to greater perceived sample-product overlap, and less desire to experience the target product “again”.

For more information contact: Yanping.Tu@warrington.ufl.edu

## ***Individual Papers: Simulation and Experiences***

### ***I know it, I own it and I care for it: How perceived environmental knowledge strengthens ownership for the environment***

Sophie Suessenbach, WU Vienna University of Economics and Business, Austria\*

Bernadette Kamleitner, WU Vienna University of Economics and Business, Austria

The need for environmental protection is well known and accepted, yet consumers are far from acting accordingly (e.g. Newton & Meyer, 2013). Protection of and care for a target is known to ensue from feelings of ownership, i.e., psychological ownership (PO), for the target (Brown, Pierce, & Crossley, 2013; Kamleitner & Rabinovich, 2010). Whether consumers are able to and do develop any notable amount of PO for the environment is currently unknown. The possibility appears, however, promising. If the environment were to feel like “mine”, it could become part of “me” (Belk, 1988; Kamleitner & Feuchtl, 2015). Consequently, protecting the environment would entail protecting myself.

For PO to arise individuals are thought to need to make one of three key experiences (Jussila, Tarkiainen, Sarstedt, & Hair, 2015; Pierce, Kostova, & Dirks, 2003): personal investment, perceived control, or intimate knowledge. In the context of the environment, knowledge appears particularly promising. It lends itself to broad scale interventions and was shown to relate to pro-environmental behavior. However, the focus in the pro-environmental literature has been on either knowledge about the problems (Feng & Reiser, 2011) or about pro-environmental options (Hanss & Bohm, 2013). The PO perspective suggests that knowledge about the target, i.e. the environment, also matters. Moreover, it suggests that the type of knowledge (cf. Kaiser & Fuhrer, 2003) matters. Given that PO amounts to a possessive claim, superior and thus relative (how much do I know compared to others) rather than absolute (how much do I know) knowledge is likely to drive PO.

All of these implications await a test and are contingent on the existence of and variability in PO for something as elusive as the environment. In a **pilot study**, we, hence, explored the existence of PO for the environment. 46 participants were asked whether they perceive the broader environment rather like “the” or “my” environment. Descriptives ( $M=48.0$ ,  $SD=30.5$ , 100-point scale) indicate that PO exists and varies and could thus be potentially relate to variations in knowledge.

**Study1A** used an online survey ( $n=124$ ) to unearth the effect of perceived knowledge compared to other key experiences on PO for the environment (items adapted from Brown, Pierce, & Crossley, 2014; Peck & Shu, 2009). Perceived knowledge was the only significant predictor of PO ( $\beta=.21$ ,  $p=.049$ ). Perceived control and personal investment had no effect.

**Study1B** ( $n=105$ ) aimed to ascertain whether this effect of knowledge was only observed because perceived knowledge had been made salient or whether in fact people who perceive themselves as more knowledgeable also perceive more PO for the environment. The three key experiences were either assessed, and thus made salient, before assessing PO or afterwards. Results support the genuine role of knowledge. In both conditions knowledge was the strongest predictor of PO. Being assessed before PO all experiences predicted PO (knowledge,  $\beta=.48$ ,  $p=.005$ ; investment,  $\beta=-.32$ ,  $p=.048$ ; control,  $\beta=.29$ ,  $p=.056$ ) while being assessed after PO only knowledge did ( $\beta=.28$ ,  $p=.054$ , all others  $p>.20$ ).

**Study2** aimed to experimentally ensure causality. Since people infer their level of knowledge from their performance (c.f. Bem, 1967), we constructed and pretested two environmental quizzes with different levels of difficulty aimed at manipulating an individual’s perceived knowledge (c.f. Park, Mothersbaugh, & Feick, 1994). Each quiz contained 6 pretested single choice questions. While the easy quiz contained questions that most participants are able to answer correctly, the difficult quiz consisted of questions that most people get wrong.

Participants (n=69) were randomly assigned to one of the quizzes and asked to fill out a questionnaire assessing perceived quiz easiness, perceived knowledge about the environment, and PO towards it.

Participants in the difficult quiz perceived the quiz as significantly harder than those in the easy quiz condition,  $p < .001$ ,  $\eta^2 = .74$ . As hypothesized quiz easiness predicted perceived knowledge ( $\beta = .64$ ,  $p < .001$ ) which, in turn, affected PO ( $\beta = .35$ ,  $p = .028$ ). The mediation was significant  $CI_{95}[0.02; 0.33]$ .

**Study3** aimed to disentangle the specific role of relative knowledge. It could be that the bond to a target may benefit in particular, if a person feels to hold superior knowledge compared to others. All participants (n=116) were asked to partake in a pretested quiz containing items with varying levels of difficulty. To manipulate perceived relative knowledge we manipulated the feedback participants got when answering specific questions correctly. In the high relative knowledge condition participant's correct answers came with the feedback that they did a great job and can be specified as experts. In the low relative knowledge condition correct answers were acknowledged by stating that many participants answered the same questions correctly and that their knowledge appears on a level with the general population. The subsequent questionnaire assessed perceived relative and absolute knowledge, PO for the environment and downstream consequences of PO: participant's need to take care of, their felt moral obligation to protect the environment, and self-reported pro-environmental behaviors.

As expected, participants in the low relative knowledge condition perceived to know as much as most others do, while those in the high relative knowledge condition perceived to know more than others ( $p = .033$ ). There was no difference in perceived absolute knowledge and the total amount of correct answers which was kept constant through the analyses. A mediation analysis showed that relative knowledge influenced PO ( $\beta = .26$ ,  $p = .013$ ), which in turn influenced participants felt need to care for the environment, their moral obligation to protect it and self-reported pro-environmental behaviors (all  $\beta$ 's  $> .19$ ,  $p$ 's  $< .05$ ). All mediation chains were significant  $CI_{95}[\text{care: } 0.02, 0.29; \text{moral obligation: } 0.03; 0.30, \text{self-reported behavior: } -0.28; -0.03]$ .

Results provide support for the notion of PO as an ubiquitous experience and they highlight that the role of knowledge in pro-environmental behavior may be even more multi-faceted than already known (c.f. Kaiser, Wolfing, & Fuhrer, 1999). The perception of high (relative) knowledge fosters a possessive claim for the environment and in turn drives the intention to engage in pro-environmental behaviors. Implications suggest that information campaigns may be particularly effective if they manage to instil a sense of knowledge superiority.

For more information contact: [bernadette.kamleitner@gmail.com](mailto:bernadette.kamleitner@gmail.com)

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

Robert Latimer, University of Toronto, Canada\*

From the director of a cruise ship to the host of a dinner party, people strive to create experiences that audiences will want to return to. Not only must the audience enjoy the event, but they must remember the event as being enjoyable. Our project reveals one possible route to that goal: making an experience more bizarre. Bizarre stimuli tend to be processed and remembered differently from more mundane stimuli (Hunt, 1995). This is true when stimuli differ from their local context, called *primary distinctiveness*, and also when stimuli differ from someone's entire life experience, called *secondary distinctiveness* or bizarreness (Schmidt, 1996). In this project we examine the impact of bizarreness.

While primary distinctiveness influences retrospective enjoyment largely by changing which parts of an experience are recalled later (Montgomery & Unava, 2009), secondary distinctiveness has more extreme consequences for stimuli processing (Worthen, 2006) and may have more direct effects on retrospective enjoyment. Bizarre elements of an experiences may shift in valence over time as well as in prominence in memory. In this project, we demonstrate that bizarre experiences are perceived as more pleasant in retrospect than during the initial experience compared to mundane experiences.

## Studies 1 and 2

The first two studies in our project provide correlational evidence that bizarre experiences become more enjoyable in retrospect. In Study 1, 289 participants recounted an autobiographical event and reported their retrospective enjoyment of the event (3-item scale,  $\alpha = .94$ ), the bizarreness of the event (3-item scale,  $\alpha = .79$ ), and how long ago the event occurred.

The bizarreness and retrospective enjoyment of experiences were correlated  $r = .32$ ,  $p < .05$ . Critically, regression analyses revealed that bizarreness was a better predictor of retrospective enjoyment for experiences further in the past, ( $\beta_{\text{bizarre} \times \text{daysago}} = 1.3$ ,  $p < .01$ ). Study 2 (N = 185) replicated these results using students' retrospective enjoyment of research participation sessions.

## Studies 3-5

In Studies 3-5, we manipulated the presence of bizarre or mundane stimuli between-subjects and participants rated their initial and retrospective enjoyment of the stimuli, leading to a 2 (bizarre/mundane) x 2 (online rating/retrospective rating) mixed design. In Study 3, 83 participants viewed a set of 12 paintings and sculptures from the MoMA: of which 2 paintings (pretested to be equally enjoyable) were either bizarre or mundane.

Participants initially reported equal enjoyment of either set ( $m_{\text{bizarre}} = 47.4$ ,  $m_{\text{mundane}} = 48.3$ ,  $p > .1$ ), but after a 6-week delay participants who viewed the bizarre paintings reported greater retrospective enjoyment of the set ( $m_{\text{bizarre}} = 54.1$ ,  $p < .05$ ) whereas those who viewed the mundane paintings reported marginally lower retrospective enjoyment of the set ( $m_{\text{mundane}} = 43.2$ ,  $p < .1$ ; Interaction  $p < .05$ )

Studies 4 (N = 43) and 5 (N = 98) replicate the relative improvement of retrospective enjoyment for multiple different bizarre vs. mundane foods in scenarios where the bizarre experience (e.g., marmite) is initially less enjoyable than the mundane experience (e.g., butter).

## Studies 6 and 7

Where Studies 3-5 show that bizarre experiences improved retrospective enjoyment *relative* to mundane experiences, Studies 6 and 7 demonstrate that the *presence* (vs. *absence*) of a bizarre element in an experience increases retrospective enjoyment. In addition, Studies 6 and 7 provide evidence for two mediating variables: how frequently participants discussed the experience after it occurred and the ease of recall of the experience during the retrospective evaluation.

Students enrolled in an introductory marketing class participated in three one hour research sessions a month apart. In each session, participants complete 6-10 different studies. We tracked 54 students' enjoyment of each study and the session overall for each of the three sessions. At the third and final session we asked for their retrospective enjoyment of the first and second sessions as well. The manipulation of bizarreness was introduced mid-way through the second session by asking half the participants to complete a bizarre 5-minute "Apple Study" (the remainder left 5 minutes early). In the apple study participants were instructed to stare at their computer screen for 160 seconds as the screen flashed varying shades of red, while varieties of apples (e.g., Fuji, Macintosh) appeared in 10 pt.

white font in the center of the screen. They then went into a small room, lit with red light where they were asked to quickly rate the appearance of several apples.

The inclusion of the bizarre apple study did not change participants' initial enjoyment of the session, ( $m_{\text{bizarre}} = 4.32$ ,  $m_{\text{bizarre absent}} = 4.38$ ,  $p > .1$ ), nor their mean enjoyment of the other studies in the session ( $m_{\text{bizarre}} = 4.35$ ,  $m_{\text{mundane}} = 4.20$ ,  $p > .1$ ), and the apple study itself was no more enjoyable than the studies surrounding it ( $m_{\text{apple study}} = 3.86$ ). After a one-month delay, however, participants who did not experience the apple study reported lower retrospective enjoyment of the second session as compared to their earlier evaluation ( $m_{\text{bizarre absent}} = 3.63$ ,  $p < .05$ ) as well as compared to those who did the apple study ( $m_{\text{bizarre}} = 4.32$ ,  $p < .05$ ; Interaction  $p < .05$ ). The retrospective enjoyment of participants who completed the apple study was no different than initial enjoyment ( $p > .9$ ). The interaction was mediated by both the reported frequency that participants talked about their second session in the lab and their ease in recalling the second session one month later ( $ps < .05$ ).

Study 7 ( $N = 102$ ) replicated the methods and results of Study 6, with two exceptions. Instead of leaving the lab early, participants in the mundane condition completed a task in which they read about different apple varieties. For the results, instead of the bizarre condition persisting in its pleasantness while the mundane condition declined, the bizarre condition became more pleasant in retrospect while the mundane condition was equally pleasant online and in retrospect.

## Conclusion

To summarize, seven studies demonstrate that bizarre experiences become more enjoyable in retrospect compared to mundane experiences. If you want an experience to be fondly remembered, make it a little weirder.

For more information contact: [rlatimer@stern.nyu.edu](mailto:rlatimer@stern.nyu.edu)

### *The Narrative Processing of Experiential Purchases*

Iñigo Gallo, IESE Business School\*

Sanjay Sood, University of California Los Angeles, USA

Jennifer Escalas, Vanderbilt University, USA

Recent research in consumer and social psychology has documented important differences between the consequences of consuming experiential purchases (trips, movies, and gym memberships: events or series of events that a consumer lives through) versus material purchases (jewelry, laptops, and shoes: tangible objects, kept in one's possession) (Gilovich & Kumar, 2015; Howell, Pchelin, & Iyer, 2012; Rosenzweig & Gilovich, 2012; Van Boven & Gilovich, 2003). For instance, consumers perceive their past experiences to be a more important part of the self than their possessions (Carter and Gilovich 2012), and experiences more than products bring consumers closer to other people and have a stronger social value (Caprariello and Reis 2013).

The current research continues to deepen our understanding of experiences compared to material possessions, but in a qualitatively important different direction: we investigate whether consumers process information – prior to purchase – differently for experiential purchases versus material purchases. Specifically, we propose that consumers are generally more likely to engage in narrative processing to evaluate experiences, compared to products. This is important because (1) finding differences in how decisions about these purchases are made validates that in fact experiential purchases constitute a different category; (2) experiential offerings in the marketplace are pervasive, and many companies are positioning material goods as experiences (Pine and Gilmore 1991; Schmitt 1999); and (3) this



further the application of narrative processing and transportation to marketing research, as recently recommended (van Laer et al. 2014).

There are at least three reasons why experiential purchases are more likely to be processed in the form of a narrative. First, most experiential purchases are laid out in a temporal succession of events, which is one of the constitutive elements of a story (Escalas 2004, Schank 1990). Think for instance of a vacation or a business dinner. These purchases have a strong temporal structure, they develop through time, with a beginning, middle, and end. Second, in an experiential purchase the corresponding events can be situated in the goal-action-outcome sequence, which is another characteristic of narrative thought. Finally, experiential purchases tend to trigger more imagery in the consumer's mind, and imagery is another necessary element for narrative processing (Green and Brock 2000).

Material purchases can be also processed in a narrative way, by asking people to imagine a usage scenario (Escalas 2007). Nevertheless, we claim that this is less likely to happen naturally, and, when it does, it is less crucial for the evaluation of material purchases than it is for that of experiential purchases. We ran a straightforward test of our theory by asking 27 participants to rate the extent to which they believed they evaluate 16 potential experiential and material purchases in a story-like fashion. Participants indeed thought their decisions about experiences were made more on the basis of story-like thinking ( $F(1, 390) = 8.85, p < .001$ ).

We test our theory with four studies. While the first two test the foundation of our proposition (experiences are more transporting; experiences are better evaluated narratively), the last two explore two antecedents of narrative transportation (narrative consistency and character identification), and how these factors matter more for the evaluation of experiential purchases.

Study 1: Participants ( $n = 125$ ) were asked to imagine that they were thinking about making two sequential purchases, either material or experiential, depending on condition. Participants were asked to respond to the transportation scale (Green and Brock 2000). As predicted, participants who considered the experiential purchases reported being more transported ( $F(1, 104) = 6.38, p < .05$ ).

Study 2: Participants ( $n = 201$ ) were presented with print advertisements for either experiential or material purchases across six different categories. We manipulated processing style: analytical versus narrative. Participants were asked to report their attitudes towards the purchases, and completed the transportation scale. Consistent with our theory, narrative processing helps the evaluations of the experiential purchases, relative to analytical processing ( $F(1, 197) = 5.95, p < .05$ ), while there was no difference in the evaluations of material purchases across processing type. Also as hypothesized, narrative transportation mediated the effect (we use Hayes 2013 in all mediation tests).

Study 3: One of the necessary conditions for a narrative to create meaning is that the narrative elements are consistent among themselves (Cho, Shen, & Wilson 2012; Hall 2003). Therefore, we propose that the narrative elements in an experience advertisement (copy, image) need to be consistent in order for the advertisement to be persuasive. Narrative consistency will be less important in the evaluation of a material purchase. Participants ( $n = 107$ ) were assigned to one of four conditions depending on the type of good (experience: restaurant, spa; product: shampoo, running shoes), and the type of ad (picture is consistent with the text versus inconsistent: text was kept constant). The pictures were pretested across conditions as equally attractive and equally fitting to the product category. As hypothesized, there was a significant interaction between type of good and consistency, so that lack of consistency harmed the experience ads but did not affect the product ads ( $F(1, 213) = 7.32, p < .05$ ). Also as hypothesized, narrative transportation mediated the effect.

Study 4. Another basic element of narratives is character identification. We predict that character identification will matter more for the advertising of experiential purchases, through its positive effect on narrative transportation. We manipulate character identification by including a photo of a female character in all stimuli, while our participants include both men and women. Participants ( $n = 341$ ) were assigned to one of six stimuli (experience: movie screening, concert, talk with a book author; product: movie poster, CD collection, book), then reported their purchase evaluations and responded to the transportation scale. We find a significant positive interaction effect

of gender by purchase type on purchase evaluations ( $F(1, 336) = 5.48, p < .05$ ). Purchase evaluations are significantly higher for women in the experiential condition, compared to women in the material condition ( $F(1, 336) = 12.0, p < .001$ ), while there is no significant difference for the men ( $F(1, 336) < 1.0, p > .50$ ). Results were once again mediated by transportation.

FIGURES

Figure 1: Pilot study – Mean self-reports on the use of narrative thinking for each experiential and material purchase

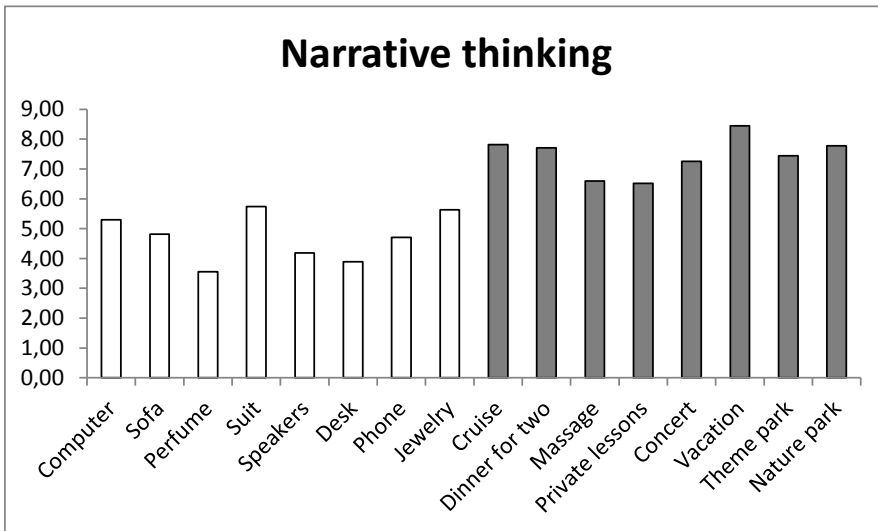


Figure 2: Study 2 – Influence of narrative versus analytical processing on transportation for material versus experiential purchases

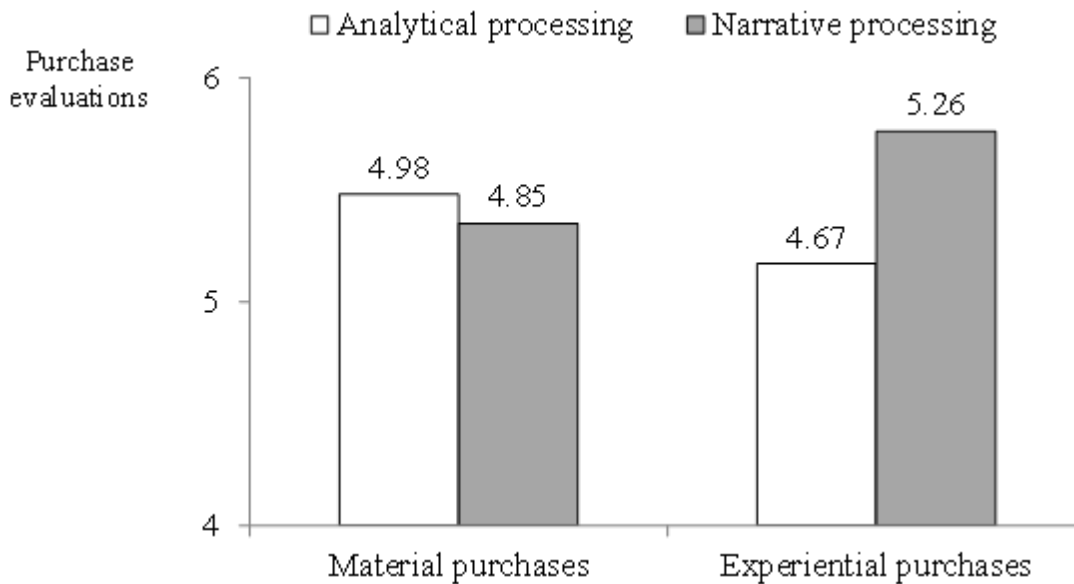


Figure 3: Study 3 – Influence of consistency on the evaluation of ads for products and for experiences

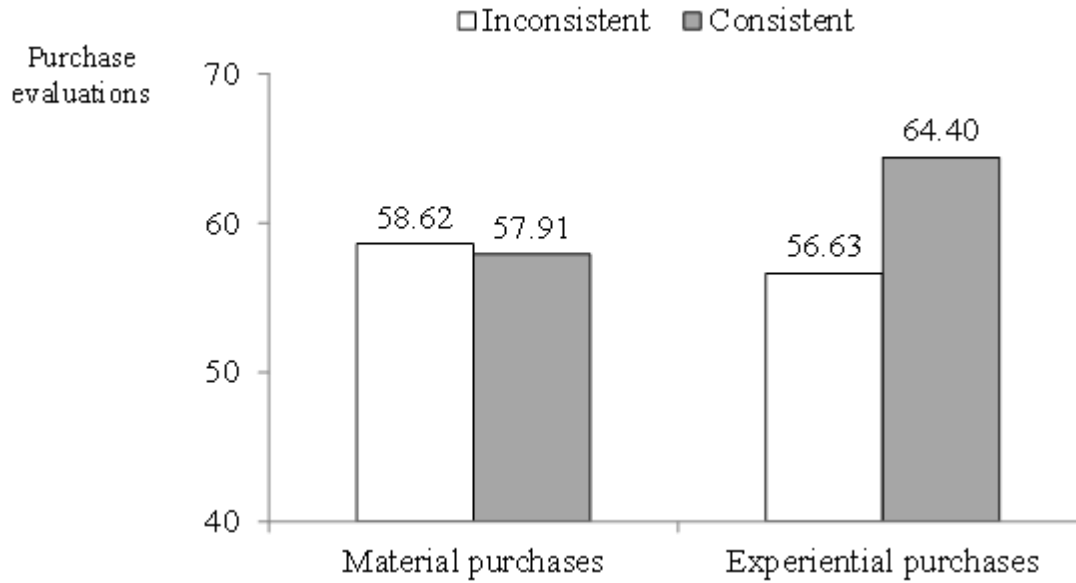
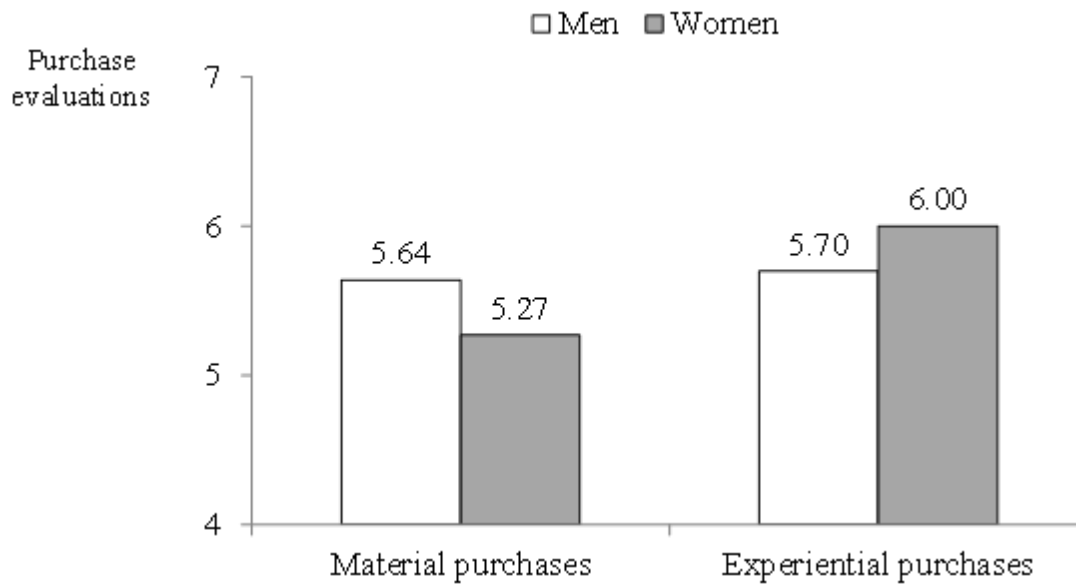


Figure 4: Study 4 – Effect character identification (gender) on narrative transportation across experiential versus material purchases



For more information contact: [igallo@iese.edu](mailto:igallo@iese.edu)

***Volume Estimation as Simulated Judgment***

Hannah Perfecto, University of California Berkeley, USA\*

Clayton R. Critcher, University of California Berkeley, USA

While standing in line at a coffee shop, consumers can eye different-sized cups on display, trying to determine which size looks ideal. While at a container store, consumers may peruse various storage boxes, trying to determine which is the right size to store the junk that

has been accumulating on one's dining room table. Previous research has examined different sources of bias when estimating volume—either the shape of the object to be judged (e.g., Anderson & Cuneo 1978, Wansink & van Ittersum 2003, Orbadayeva & Chandon 2013), or the psychological states of the judge (Cornil, Orbadayeva, Kaiser, Weber, & Chandon, 2014). Although such work has identified robust sources of estimate error, they largely remain “as-if models”—algorithms that can predict when consumers' judgments will err, but that remain agnostic about the actual process by which those judgments are made. We instead propose a specific mental process by which volume estimations often unfold, thereby allowing us to make two novel predictions about what biases such judgments.

We posit that volume estimation is often made through *simulated judgment*. This proposal draws on diverse literatures that converge to suggest the key role of mental simulation in judgments and forecasts. For example, features that make it easier to imagine what global warming would feel like can make the simulations seem sharper and thus more likely (Risen and Critcher, 2011). Closer to physical judgments, Proffitt and colleagues (1996, 2003) demonstrate that being weighted down makes hills appear steeper: because the weight would make the climb more difficult, people simulate the climb (and thus the slope) as steeper.

Building on these literatures, we suggest that estimating a receptacle's volume can involve simulating an interaction with it: how much one can imagine pouring into the container. But given that pouring happens with the flow of gravity—from top to bottom—we suggest that two features can (and do) influence such judgments. First, we hypothesize an *orientation effect*—that the same glass will appear bigger right-side-up than up-side-down. We test whether this is explained by the simpler mental simulation of filling an upright cup. Second, we posit a *cavern effect*—that imagining pouring through a narrow top into a wide base (as though into a cavern) makes the volume seem bigger than pouring through a wide top into a narrow base. More precisely, we suggest that—all else equal—a container with a small top-to-base ratio will look bigger than one with a large top-to-base ratio.

Study 1 focuses on the *orientation effect*. Participants (N = 302) were presented with a sequence of 24 images of 12 actual glasses (taken from Google Images) that varied in shape (e.g., plastic cup, coffee mug, stemless wineglass), size, and color. Each image was presented twice—once right-side-up, and once upside-down. In all studies, participants saw a reference cylinder of a specified size (in order to make the scaling clear) before being shown the target cup. Consistent with hypotheses, the exact same cup looked bigger when right-side-up than upside-down  $t(5989.90) = 2.92, p = .004$ .

Study 2 (N = 250) built on Study 1 in two primary ways. First, whereas Study 1 used images of actual glasses (for purposes of external validity), Study 2 used computer-generated images. This allowed us to hold the shape of a cup constant, but vary whether the wide or narrow end was depicted as the open top or the closed base. Second, we modified the images so that the cup appeared empty, or entirely full of water. We then asked participants how much they could pour into the *empty* cup, or pour out of the *full* cup. We observed main effects of orientation and the top-to-base ratio,  $t_s > 4.70, p_s < .01$ , consistent with the orientation effect (right-side-up cups looked bigger) and cavern effect (cups with narrow tops and wide bases looked bigger), respectively. Showing the key role of simulation in these judgments, both effects were larger when participants imagined filling up (as opposed to emptying) the cup,  $t_s > 4.19, p_s < .01$ .

Study 3 (N = 209) delved more deeply into both the orientation and cavern effects. First, we asked participants about the ease of the simulation (“To what extent did you find it easy or difficult to mentally simulate filling up the cup?”) Participants' higher volume estimates of right-side-up cups were partially mediated by simulation ease. Second, we held the volume of the cups constant, but varied the top-to-base ratio. This permitted us to observe that the cavern effect emerges only when there is a sufficient mismatch between a narrow top and wide base (versus the reverse), and not from the size of the top or base alone.

Study 4 (N = 388) more precisely tested the role of mental simulation (versus mere container shape) in producing the cavern effect. Participants saw open or lidded cups. In filling an open cup, the size of the top is the size of the aperture through which the cup can be

filled. But for the lidded cups, which always included only a small hole through which to fill the cup, this link was disrupted. Showing the key role of simulated judgment (as opposed to mere shape), the lidded nature of the cups moderated the cavern effect: narrow tops and wide bases exaggerated the size of containers, but only when open.

Although considerable attention has been given to biases in psychophysical judgments, the present work is among the first to propose a specific psychological process by which such judgments are made. The present findings suggest that restaurant and store owners would do well to display containers right-side-up. Furthermore, packaging designers may be wise to design products with low top-to-base ratios (e.g., Yoplait yogurt) as opposed to the reverse (e.g., snowcones). Through this talk, we will emphasize the complimentary roles that basic and applied research can play: Only by offering and testing a new theoretical process account of how volume estimation unfolds were we able to make predictions for what externally-valid features should distort such judgment.

For more information contact: hannah\_perfecto@haas.berkeley.edu

## ***Individual Papers: Decision Environment and Consumption***

### ***The Impact Of Oral Versus Manual Expression Modalities On Choice Satisfaction***

Thorsten Voss, Mannheim University, Germany

Anne-Kathrin Klesse, Tilburg University, The Netherlands\*

Caroline Goukens, Maastricht University, The Netherlands

Jonathan Levav, Stanford University, USA

In the marketplace consumers express their preferences using various modalities. For instance, in a grocery store, shoppers select items by taking them from the shelf and in restaurants diners express their preference by speaking to the waiter. Recent research (Klesse, Levav, & Goukens, 2015) shows that expression modality can influence the degree to which people exert cognitive control over their immediate consumption impulses. When people express their choice orally rather than manually, they tend to select options that have greater hedonic value (e.g., chocolate) over options associated with positive cognitions (e.g., fruit). Those who decide orally appear to afford greater weight to the affective dimensions of an option and those who decide manually appear to afford greater weight to its cognitive dimensions (Klesse et al., 2015).

We argue that people who make a choice orally are more satisfied with their selection because their choice reflects their immediate desires, rather than something resembling a deliberative cognitive process (Wilson & Schooler, 1991). In our six studies, participants either express their decision orally (speaking) or manually (by grabbing or button pressing) then report their choice satisfaction ('I am happy with my choice', 'I am pleased with my choice', and 'I feel satisfied with my choice,' 7 = strongly agree) immediately after making their choice. In study 1a, participants chose between two tasks, A and B, that unbeknownst to them were identical. Oral preference expression resulted in greater choice satisfaction ( $M_{\text{Oral}} = 5.67$ ) than manual expression ( $M_{\text{Manual}} = 5.07$ ;  $F(1, 80) = 7.42$ ,  $p = .035$ ). In study 1b, participants chose between two identical looking cups of Cola; one of which we claimed to contain national brand (NB) Cola and the other private label (PL) Cola; both contained NB Cola. Speaking resulted in greater choice satisfaction than manual expression ( $M_{\text{Oral}} = 4.99$  versus  $M_{\text{Manual}} = 4.31$ ,  $F(1, 189) = 12.89$ ,  $p < .0005$ ). Study 2 was similar to study 1b, but instead of assessing individuals' choice satisfaction before they tried the Cola, we asked participants to drink the Cola and then assessed their actual consumption enjoyment ('The Cola tasted really great,' 'The Cola was very satisfying,' and 'The Cola was very enjoyable,' 7 = strongly agree;  $\alpha = .96$ ). Participants who expressed their choice orally ( $M_{\text{Oral}} = 4.89$ ,  $SD = 1.39$ ) reported greater satisfaction with the taste than those who expressed their choice manually ( $M_{\text{Manual}} = 4.17$ ,  $SD = 1.56$ ,  $F(1, 117) = 7.18$ ,  $p = .008$ ). This study shows that the effect of

preference expression modality extends to actual enjoyment. In study 3, we compared speaking to two manual modalities: grabbing and button pressing. In doing so, we can exclude the possibility that there is something particular about taking that might have decreased individuals' choice satisfaction. Speaking resulted in greater choice satisfaction than both manual—grabbing and button pressing—modalities ( $M_{\text{Oral}} = 5.38$  versus  $M_{\text{Button}} = 4.93$  and  $M_{\text{Grabbing}} = 4.73$ ,  $F(1, 187) = 8.61$ ,  $p = .004$ ). The two manual conditions, however, did not differ significantly ( $p = .36$ ).

We argue that speaking prompts greater choice satisfaction because it triggers more intuitive relative to more cognitive decision processes. Studies 4 and 5 test this prediction by using manipulations that have been shown to affect the degree of cognition involved in a task. In study 4, we utilized a fluency manipulation—difficult versus easy to read font—in the instruction sheet. A two-way ANOVA with satisfaction as the dependent variable revealed a significant interaction effect between modality and fluency ( $F(1, 196) = 5.03$ ,  $p = .026$ ). Speaking resulted in greater satisfaction when the font was easy to read ( $M_{\text{Oral}} = 5.10$  and  $M_{\text{Manual}} = 4.35$ ,  $F(1, 196) = 9.84$ ,  $p = .002$ ), but not when it was difficult to read ( $M_{\text{Oral}} = 4.65$  and  $M_{\text{Manual}} = 4.71$ ,  $F(1, 98) = .05$ ,  $p = .82$ ). In study 5, participants listened to music—low versus high volume—using noise-cancelling headphones while making their choice. This enabled us to manipulate whether they could hear themselves speak or whether they received altered auditory feedback, which has been shown to trigger cognition (Heinks-Maldonado et al., 2005). A two-way ANOVA with satisfaction as the dependent variable revealed a significant interaction effect between modality and music volume ( $F(2, 139) = 2.72$ ,  $p = .05$ ). Speaking resulted in greater satisfaction in the low volume condition ( $M_{\text{Oral}} = 5.59$  and  $M_{\text{Manual}} = 4.76$ ,  $F(1, 196) = 12.26$ ,  $p = .005$ ), but not in the high volume condition ( $M_{\text{Oral}} = 5.00$  and  $M_{\text{Manual}} = 5.01$ ,  $F(1, 70) = .001$ ,  $p = .98$ ).

To our knowledge, this paper is the first to demonstrate that subtle changes in the modality utilized to express one's choice impact choice satisfaction and actual enjoyment of a chosen option even if the choice outcome is identical.

For more information contact: [A.K.Klesse@uvt.nl](mailto:A.K.Klesse@uvt.nl)

### ***The Indirect Effect of Repetition on Consumer Enjoyment***

Nükhet Agar, Koc University, Turkey\*

Baler Bilgin, Koc University, Turkey

Many consumers may make category-level judgments as they repeat an experience. Imagine, for example, eating a milk chocolate bar. Each bite may make you realize more that it tastes just like any other product in its category. Imagine now eating cayenne pepper flavored chocolate bar. With each additional bite, the cayenne pepper flavor reminds you that there may be many other flavors in this category. How would these judgments influence your enjoyment of the chocolate bar?

In the current article, we introduce the indirect effect of perceived repetition on consumer enjoyment. We propose that repetition of an experience facilitates thoughts about the variety that exists in the category. For instance, repeatedly focusing on the aspects that make an item similar to others in the category (i.e., its non-distinguishing aspects) may reduce consumers' belief that the category offers variety of options. Repetition may increase perceived variety in a category, however, when focusing on the aspects of an experience that set the experience apart from others in its category (i.e. its distinguishing aspects). As mental representations of variety extend enjoyment of the on-going experience (Sevilla, Zhang and Kahn in press), we propose that repetition that serves to increase perceived variety should extend consumer enjoyment. Repetition that serves to reduce perceived variety, however, should reduce consumer enjoyment faster.

By exploring this indirect effect, this article makes several meaningful contributions to hedonic adaptation and variety literatures. First, the current article puts forth a novel relationship between repetition and variety. By focusing on repetition's ability to prompt category-relevant thoughts, we find that higher (vs. lower) repetition may influence variety judgments. Second, contrary to the dominantly examined negative direct effect of repetition on adaptation (see Epstein et al. 2009 for a review), this article examines its scantily researched indirect effect. We find that consumers naturally attend to the non-distinguishing aspects of their experiences, which reveals the negative indirect effect of repetition. On the other hand, we propose that higher (vs. lower) repetition may have a positive effect on enjoyment when consumers attend to the distinguishing aspects of their experiences.

Experiment 1 (n=61) employed a 3 (focus of attention: control, non-distinct, distinct) x 6 (repeated experience) mixed design with the second factor manipulated within-subjects. Participants listened to a pop song six times in a row and rated their enjoyment of the song after each time (0=not at all, 100=very much). One third of the participants were instructed to focus on a distinguishing aspect (i.e., distinct condition), and one third of the participants were instructed to focus on a non-distinguishing aspect of the song (i.e., non-distinct condition). The rest of the participants were not given any instructions (i.e., control condition). To examine the indirect effect of repetition, we hold perceived repetition constant across conditions. If repetition increases (vs. reduces) perceived variety in a category when participants focus on a distinguishing (vs. non-distinguishing) aspect of the song, as we propose, we should find lower adaptation rates for distinct (vs. non-distinct) condition. Moreover, we argued that consumers have a natural tendency to attend to non-distinguishing aspects of their experiences. If true, we should observe adaptation rates between non-distinct and control conditions to be relatively similar. The results in Experiment 1 supported these hypotheses.

Although we argue that focusing on distinguishing aspects should reduce adaptation by prompting variety-related thoughts, another implication of distinctiveness could be the likeability of these aspects. One of our evolutionary instincts is to acquire those items that possess positive qualities (Gable and Harmon-Jones 2008). It may hence be reasonable suggest that distinct items could influence hedonic adaptation rates due to their implied likeability. Wanting to acquire an item and wanting to repeatedly consume it are different processes, however. The likeability of an item can increase its probability of being acquired, but it may not guarantee its repeated usage (DePaoli and Kahn 2015). We hence believe that likeability of an item may not be sufficient to reveal the positive indirect effect of repetition. Experiment 2 (n=73) investigates this by having participants either attend to distinguishing or likeable aspects of a song sample in a 2 (focus: distinguishing aspects versus likeable aspects) x 6 (repeated experience) mixed design. If the likeability of an item is sufficient to reveal the indirect effect of repetition, we should observe no differences in adaptation for the current experience between distinct and likeable conditions. If the results depend on perceived variety, as we suggest, then we should still observe participants focusing on the distinguishing (vs. likeable) aspects to demonstrate slower adaptation rates. The results showed the latter case to hold, ruling out this alternative explanation.

In Experiment 3 (n=127), we examined the implications of higher (vs. lower) repetition feeling for the indirect effect of repetition in a 2 (repetition: high versus low) x 2 (focus: control versus distinct) x 6 (repeated experience) mixed design. We have argued that repetition facilitates thoughts about the general category, where higher repetition of distinguishing (vs. non-distinguishing) aspects underlines the variety (vs. uniformity) that exists in the category. If high repetition feeling is necessary to facilitate category-related thoughts during an experience, then reducing repetition felt during this experience may reduce or eliminate the indirect effect of repetition, leading to the commonly observed reduction in enjoyment ratings. Contrary to that, facilitating thoughts about the general category hurts consumer enjoyment when attending to non-distinguishing aspects (by underlining the uniformity of the category). Hence, reducing repetition felt during the experience should reduce adaptation in this case. As expected, our results revealed that increasing perceived repetition of an experience increased hedonic adaptation in the control condition, but reduced hedonic adaptation in the distinct condition. Moreover, a moderated mediation analysis from PROCESS (Hayes 2012) showed that perceived variety judgments mediated this effect.

The current article contributes to the adaptation literature by introducing the key insight that perceived repetition has an indirect effect on adaptation by prompting category-level thoughts. We believe it would be worthwhile for future research to further clarify the role perceived repetition plays in adaptation.

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

***Helps Low-Discount Promotions, Hurts High-Discount Promotions: The Effect of Free Gift Voucher in Conditional Promotions***

Yan Zhang, National University of Singapore, Singapore\*

Yu Ding, National University of Singapore, Singapore

Many companies commonly offer free gifts to induce consumers to purchase their products. Such offers are typically called conditional price promotions, where companies offer consumers a “supplementary” product for free or for a low, discounted price conditional on the purchase of a “focal” product (Neslin 2002; Palmeira and Srivastava 2013). A typical conditional promotion is to offer the supplementary product for free directly. A slightly different, but also common, way to run the promotion is to offer a voucher with which customers can exchange for a gift for free.

Normatively speaking, the two types of conditional promotions should not affect a consumer’s intention to purchase the focal product differently, because a voucher itself carries no additional economic value. In this research, however, we suggest that instead of just involving a procedural step that consumers have to go through in order to receive the free gift, a voucher can exert a non-negligible effect on consumer’s intention to purchase the focal product. We borrow from previous research on medium (Hsee et al. 2003) and suggest that a voucher functions as a medium that obstructs people from comparing the price of the focal product with the value of the free gift, and consequently dim the price difference between the focal product and the free gift. As a result, for high-discount promotions where the value of the free gift in relation to the focal product is high, using a voucher tends to deemphasize the high value of the gift, and thus decreases consumers’ intention to purchase the focal product; whereas for low-discount promotions where the value of the free gift in relation to the focal product is low, using a voucher tends to lower consumers’ attention to the cheap value of the free gift, and thus increases their intention to purchase the focal product. Thus, although voucher does not carry any economic value in itself, using it in conditional promotions can effectively affect consumer’s purchase intention.

We tested this prediction in 4 experiments. In experiment 1, we hold the focal product constant and vary gift value. Participants were asked to imagine that they wanted to buy a digital camera (focal product), and they could receive an external hard drive (high-discount condition) or a flash drive (low-discount condition) as a free gift for purchasing the camera. The free gift was either offered directly or exchanged through a gift voucher. We found a significant interaction between discount level and voucher,  $F(1, 157) = 9.09, p = .003, \eta_p^2 = .055$ . For high-discount promotions (gift being the external hard drive), using a voucher significantly lowered participants’ purchase intention of the digital camera ( $M = 3.81, SD = 1.33$ ) as compared to not using a voucher ( $M = 4.41, SD = 1.40; F(1, 157) = 3.95, p = .049, \eta_p^2 = .025$ ). In contrast, for low-discount promotions (gift being the flash drive), using a voucher significantly increased participants’ purchase intention ( $M = 4.10, SD = 1.28$ ) as compared to not using a voucher ( $M = 3.42, SD = 1.30; F(1, 157) = 5.19, p = .024, \eta_p^2 = .032$ ). Experiment 2 replicated the findings of experiment 1 by fixing the free gift but varying the focal product’s price to manipulate the discount levels. A Logistic Regression on purchase decision returned a significant interaction between discount level and voucher,  $\chi^2 = 11.67, p = .001$ . Specifically, we found that using a voucher in high-discount promotions significantly lowered the percentage of participants making the purchase from 63% to 39%,  $\chi^2 = 3.74, p = .053$ . In contrast, using a voucher in low-discount promotions significantly increased the percentage of participants making the purchase from 25% to 59%,  $\chi^2 = 8.87, p = .003$ . Experiment 3 tested the underlying mechanism for this effect. We manipulated whether consumers considered the price of the free gift before or after they



indicated their purchase intention. We predict that by making participants consider the gift price before indicating their purchase intention, we could highlight whether the promotion offers high or low discount, thus overwrite the effect of the voucher. The experiment finds evidence consistent with this prediction. In experiment 4, we primed participants a comparison mind-set. We found that activating a comparison mind-set also mitigated the effect of a voucher on purchase intention.

Taken together, these experiment demonstrate that as compared to offering a free gift directly, introducing a voucher in high-discount conditional promotions decreases purchase intention while doing that in low-discount promotions increases purchase intention. Although a voucher itself does not carry any economic value, using it in conditional promotions could systematically affect consumer's purchase intention.

For more information contact: yan.zhang@nus.edu.sg

### *Is it all relative? The effect of number format on relative thinking in numerical judgments*

Tatiana Sokolova, University of Michigan, USA\*

Manoj Thomas, Cornell University, USA

Jane can buy a pen (USB key) for \$2 (\$20) at a nearby store or get it for \$1 (\$19) at a store eight blocks away. Jane can think in relative terms and consider the 50% savings (5%), or think in absolute terms and focus on her absolute savings of \$1. Normatively, Jane should ignore the relative savings, and only weigh the potential dollar savings against the time and effort it would take to get them. However, research in behavioral economics and consumer psychology suggests that Jane's decision will likely be guided by relative savings considerations (Azar 2007; Thaler 1980). The tendency to rely on relative thinking was recently attributed to intuitive processing and the psychophysics of number evaluations (Azar 2007; Saini and Thota 2010). Because intuitive magnitude representation is not linear, but logarithmically compressed, people perceive differences between larger numbers to be smaller than equivalent absolute differences between smaller numbers (Dehaene 1992; Moyer and Landauer 1967). As consumers become more prone to rely on their intuitions, the effect of relative thinking becomes stronger (Saini and Thota 2010).

This paper builds on research on numerical cognition to identify a novel factor moderating relative thinking. We propose that the intuitive number representations, underlying relative thinking, are available for integers between 1 and 100, and are either underdeveloped or absent for large numbers and decimals. While numerical information is omnipresent in our lives, our exposure to different number formats is uneven. We rarely deal with very large numbers or decimal quantities: prices of most frequently purchased goods fall below 10 in the US and Europe; we usually use numbers between 1 and 60 to talk about time and buy items in relatively small sets. As a result of this lack of experience, the intuitive representations of very large numbers and decimals should be underdeveloped, and relative thinking should not manifest in comparisons of such numbers. In this paper we propose that: people will be less likely to think in relative terms when processing (a) large (versus small) integers and (b) decimals (versus integers). We further propose that experience in number evaluations can induce relative thinking for such numbers. We test our predictions in four studies.

Study 1 compared relative thinking for large versus small numbers. The study adopted a 2 (Price format (PF): five-digit/ two-digit) x 2 (Relative price difference (RD): small (30 vs. 50)/ large (5 vs. 25)) between-subjects design. Online panelists chose between an inexpensive indirect ticket and an expensive direct ticket (n=163). The results of the logistic regression supported our predictions ( $b_{RD}=1.62, p=.001$ ;  $b_{PF \times RD}=-1.66, p=.014$ ). When prices were expressed in the two-digit format, people were more likely to select the expensive option in the small relative difference format condition ( $\Pi_{small\ RD}=79\%$  vs.  $\Pi_{large\ RD}=43\%$ ,  $p=.001$ ). This effect was eliminated

when prices were expressed in the five-digit format ( $\Pi_{\text{small RD}}=57\%$  vs.  $\Pi_{\text{large RD}}=58\%$ ,  $p=.97$ ). Thus, we found preliminary support to the first prediction by showing that relative thinking was attenuated in judgments of large numbers.

Study 2 examined relative thinking for decimals versus integers. Participants chose between an “inexpensive” bagel and an “expensive” bagel with cheese ( $n=150$ ). The study adopted a 2 (PF: decimals/ integers) x 2 (RD: small/ large) between-subjects design. The results supported our predictions ( $b_{\text{RD}}=1.96$ ,  $p=.004$ ;  $b_{\text{PFxRD}}=-1.86$ ,  $p=.030$ ). People were significantly more likely to choose the expensive option when the relative price difference was small in the integer condition ( $\Pi_{\text{small RD}}=92\%$  vs.  $\Pi_{\text{large RD}}=62\%$ ,  $p=.004$ ), but not in the decimal condition ( $\Pi_{\text{small RD}}=74\%$  vs.  $\Pi_{\text{large RD}}=70\%$ ,  $p=.856$ ).

Study 3 ruled out processing fluency created through rehearsal of arithmetic facts as an alternative account. Operands (e.g. 5) featured in common multiplication problems can make their respective products more cognitively accessible (i.e. 25) and induce feelings of cognitive ease (King and Janiszewski 2011). In Studies 1 and 2, processing fluency of the large relative difference pair “5 and 25” could have made the difference between the corresponding prices look larger in the integer condition (Thomas and Morwitz 2009), but not in the decimal condition lacking memory associations for simple arithmetic facts. To rule out this account we did not use any numbers associated with multiplication facts in Study 3. Otherwise the design was the same as that of Study 2. The results supported our predictions ( $b_{\text{RD}}=1.38$ ,  $p=.004$ ;  $b_{\text{PFxRD}}=-1.37$ ,  $p=.029$ ). Relative thinking affected choice in the integer condition ( $\Pi_{\text{small RD}}=84\%$  vs.  $\Pi_{\text{large RD}}=57\%$ ,  $p=.004$ ), but not in the decimal condition ( $\Pi_{\text{small RD}}=60\%$  vs.  $\Pi_{\text{large RD}}=60\%$ ,  $p=.969$ ).

Study 4 examined the role of experience in relative thinking. The study adopted a 3 (Experience: with decimals/ with decimals and circles/ control) x 2 (RD: small/ large) between-subjects design. Participants first completed an ostensibly unrelated task. In the “experience with decimals” condition, they saw 24 decimal pairs and identified the larger decimal in each pair. Participants in the control condition compared circle sets in size and identified the larger set in each pair. We also included an “experience with decimals and circles” condition to ensure it was the decimal comparison task that induced relative thinking, rather than the circle comparison task that attenuated it. Next, participants completed the choice task from the “decimals condition” of Study 3. Consistent with our theorizing, there was no effect of relative thinking in the control condition ( $\Pi_{\text{small RD}}=56\%$  vs.  $\Pi_{\text{large RD}}=62\%$ ,  $p=.56$ ), but there was a significant effect of relative thinking in the “experience with decimals” ( $\Pi_{\text{small RD}}=61\%$  vs.  $\Pi_{\text{large RD}}=34\%$ ,  $p=.016$ ) and the “experience with decimals and circles” conditions ( $\Pi_{\text{small RD}}=71\%$  vs.  $\Pi_{\text{large RD}}=36\%$ ,  $p=.002$ ).

This research identifies a novel boundary condition of relative thinking, a well-established and practically relevant bias in individual decision-making (e.g. Azar 2007; Thaler 1980). It also contributes to the numerical cognition research by showing that mental number representations (i.e. intuitive vs. precise), previously captured by response-time latencies (Cohen 2010; Dehaene, et al. 1990), can also be traced in individual decision-making. Finally, our results can inform managers on how to frame their prices depending on which products (inexpensive versus expensive) they would like to sell first.

For more information contact: [tatiana.sokolova@hec.edu](mailto:tatiana.sokolova@hec.edu)

**Break**  
**3:30 pm - 3:45 pm**  
**Grand Palm Col. West**

**Symposium: Beyond the Choice Set: The Impact of Considering Outside Options**

**Chair:** Liz Friedman, Yale University, USA

***The Role of Similarity when Considering Alternatives in Purchase Decisions***

Liz Friedman, Yale University, USA\*

Jennifer Savary, University of Arizona, USA

Ravi Dhar, Yale University, USA

When deciding whether to buy an item, consumers sometimes think about other uses for their money. For example, a consumer who is considering purchasing a \$25 button-down shirt might think about how to spend that \$25 on alternatives that are not part of the immediate choice set. The alternatives may be similar to the target item, such as a polo shirt or a tie, or different, such as gas or a video game. In the current research we explore how purchase intent for a target item varies depending on the alternatives' similarity to the target item.

Past research on consideration of alternatives has primarily focused on comparing situations where no alternative is considered to situations where an alternative is considered (e.g. Posavac et al., 2004). In consumer contexts, subtle reminders to think about alternative uses of money have been shown to decrease purchase incidence (Frederick et al., 2009). However, while past research has explored if and when people consider alternatives, and the broad effect of prompting them to do so, an open question is how behavior may systemically vary as a function of type of alternative considered.

In the current research, we explore how purchase intentions vary depending on the alternatives' similarity to the target item. Specifically, we show that when consumers consider dissimilar alternatives, they will be relatively less interested in the target item, as compared to when they consider similar alternatives. Building on Sagi and Friedland (2007), we propose that considering dissimilar alternatives is more likely to increase anticipated regret than considering similar alternatives, which in turn decreases purchase intent.

In six studies, we explore how purchase interest for a target item is impacted when alternative ways to spend that money are considered, and specifically, when those alternatives are similar versus dissimilar to the target. In Study 1A, all participants evaluated two target items: movie tickets and a massage, with the order counterbalanced. After viewing a picture, price and short description of the target item, participants were asked to briefly list three alternative ways of spending the same amount of money as the price of the target. There were three between-subjects conditions: Participants in the similar condition listed alternatives similar to the target. Participants in the dissimilar condition listed alternatives NOT similar to the target. Participants in the control condition skipped the step of listing alternatives. All participants then indicated their likelihood of purchasing the target item a 9-point likert scale.

We found that the type of alternative considered had a significant impact on purchase interest for the target item. As predicted, participants in the control condition were most interested in purchasing the target ( $M=5.9$ ). Participants in the similar condition were somewhat less interested in purchasing the massage ( $M=4.8$ ), and participants in the dissimilar condition were least interested in the purchase of the target item ( $M=4.1$ ). Study 1B replicates these results using utilitarian rather than hedonic target items, and suggests that the effect is not limited to hedonic target items.

Study 1C replicated Study 1A (with a massage as the target) with two additions: a fourth “unspecified” condition was included (where participants listed three alternatives, with no similarity specification), and all participants were asked to list their thought process before deciding whether to buy the target item. We replicate our result from Study 1A for the control, similar and dissimilar conditions. Purchase intent ratings in the unspecified condition resembled those in the dissimilar condition, as did post-hoc self-ratings of similarity of alternatives to the target. The unspecified condition sheds light on the types of alternatives consumers might consider spontaneously, and offers evidence against the explanation that the difference in purchase intent between the similar and dissimilar conditions is due to similar alternatives already being taken into account in some capacity. Moreover, the thought-listing task revealed that participants in the dissimilar and unspecified conditions were more likely to mention other items they could purchase than participants in the similar or control conditions.

In study 2, we explore whether the effect was driven by the process of generating the alternatives, or if merely considering a similar vs. dissimilar alternative would result in the same pattern. To test this, we asked participants to evaluate a duvet cover, and provided them with a potential alternative way to spend the same amount of money. In the similar condition, the alternative was a mattress pad, and in the dissimilar condition, it was running shoes (the alternatives were chosen because they were matched on attractiveness and hedonic/utilitarian ratings in a pre-test). As predicted, participants in the similar condition were more likely to buy the duvet than those in the dissimilar condition.

In study 3, we use a mediation model to further investigate our underlying mechanism. Moreover, we rule out an alternative explanation, that the difference in purchase interest is driven by dissimilar items being more attractive than similar items (because they are less constrained), rather than by their similarity to the target item. We use a 2 (attractiveness: more vs. less) x 2 (similarity: similar vs. dissimilar) design. We manipulate attractiveness by prompting participants to generate alternatives that are more or less attractive than the target. We replicate our main effect of similarity, and find null results for the attractiveness manipulation. We also show that the effect of similarity of the alternative considered on purchase interest of the target is mediated by anticipated regret.

Finally, study 4 demonstrates the effect using a choice dependent measure. We present participants with 2 target options: a blue and a white shirt, and ask them to generate similar or dissimilar alternatives. Participants are given the opportunity to purchase one or both of the target options, or defer the choice and keep shopping (Dhar, 1997). We find that consumers are more likely to defer making a choice after generating dissimilar alternatives than after generating similar alternatives.

Taken together, these results suggest that considering alternatives to purchase has an effect beyond merely taking them into account or not; the type of alternative considered can have a significant impact on purchase decisions.

For more information contact: [elizabeth.friedman@yale.edu](mailto:elizabeth.friedman@yale.edu)

### ***The Impact of ‘Display Set Composition’ on Purchase Likelihood***

Uma Karmarkar, Harvard Business School, USA\*

Suppose you are shopping online, and deciding whether to buy a specific coffee maker. Are you more likely to click the “buy” button it when it is featured on its own product page, or when it is on a page that shows other recommended coffee makers? What if you came across it on a site advertising popular products from several different categories?

It's well established that changing the composition of a choice set can influence people's decisions and shift their preferences (e.g. Tversky and Simonson, 1993; Bettman, Luce and Payne, 1998; etc.). These studies often examine how increasing the options in a set will cause switching, or influence preferences for one item of interest in comparison to the others. However, it remains unclear how a buy/no buy decision about one particular item might be influenced by its display set composition.

Previous research has examined the impact of "phantom" alternatives, or choice options that are presented to an individual despite being unavailable (Pratkanis and Farquhar, 1992). Phantom alternatives create a range of biases dependent on several factors, including the degree of uncertainty about their unavailability (Farquhar and Pratkanis 1993). But when their unavailability is concrete, phantoms can create preference shifts similar to those observed with real alternatives (e.g. Doyle et al. 1999). Thus in the current work, we propose that the mere (viewable) presence of additional items in the display will impact perceptions of value and likelihood of purchase, even when the actionable "choice set" is held to a single target product.

Recent findings in decision neuroscience on "value normalization" mechanisms have shown that adding options to a set can create a net reduction in the perceived value of a preferred item in addition to making it less discriminable from other options (e.g. Louie et al. 2013, Webb et al., 2014). As a whole, these findings suggest that additions of display-only items may decrease the target's purchase likelihood by decreasing its perceived value. Furthermore, they predict that the effects may be strongest when the display items are comparable to the target.

Study 1 tested our basic hypothesis that display set composition can alter purchase intentions, as well as the predictions arising from value normalization. Participants (n=225) were asked to make four hypothetical buy/no-buy decisions. Those in the "alone" condition saw a labeled photo of the target product and its price. Participants in the "comparable" condition saw the same target product/price information flanked by photos of two products from the same general category (e.g. a target board game shown between two other board games). Participants in the "non-comparable" condition saw the products flanked by photos of two products from other categories (e.g. a target board game flanked by a Swiss army knife and a candle.) Participants were informed that the non-target products were only there as part of the display.

Comparing the three conditions, we found significant differences ( $p < .01$ ), largely arising from whether the "display items" were from the same or different product categories. Average total purchase rates for the four products in the comparable condition ( $M=1.77$ ) were marginally higher than the alone condition ( $M=1.47$ ,  $p=.08$ ), and significantly higher than the non-comparable condition ( $M=1.25$ ,  $p < .02$ ). The difference between non-comparable and alone was not significant. Surprisingly, despite these differences in purchase intent, the display items did not change average liking rates for the target items, nor did they influence average willingness to pay for them.

Given the disparity between these results and the decreases in value predicted by value normalization, Study 2 tested how much the impact of display items depends on the specific products shown. We offered participants a single hypothetical purchase decision assigned via a counterbalanced 2x2 design that varied the type of target item (art poster vs. board game) and the category of the display items (comparable vs. non-comparable). Once again, we found a (main) effect in which purchase intentions were higher in the comparable compared to the non-comparable condition. There was no main effect of product type, nor interaction effects, suggesting that the increases in target purchase likelihood were not due to the display items themselves, but to their similarity to the target.

Secondary regression analyses on data from Studies 1 and 2 did reveal that, pooling across conditions, preferences for the display items had a significant positive correlation with purchase intent towards the target item. This raises the question of whether our observed effects could be boosted or diminished by the relative value of the display items as compared to the target. Study 3 examined this by manipulating the display items' a priori value (high vs. low) and similarity to the target item (comparable vs. non-comparable). We once

again replicated our main similarity finding, but found that the value of the display items had no direct or moderating effects on purchase rates.

Overall, we find that adding items to the “display set” does indeed significantly impact buy/no buy decisions, but in a direction seemingly contrary to possible predictions from value normalization models. Rather our results suggest that when the display set consistently reflects one category, it increases the likelihood of making a purchase from that category. One practical implication of this work is that retailers may be most effective at promoting a product by ensuring that it draws attention on the shelf among similar products rather than featured separately as one-of-a-kind.

For more information contact: ukarmarkar@hbs.edu

### ***Decision-Tree Structures and their Impact on Similarity Judgment and Replacement Choices***

Rom Schrift, The Wharton School, USA\*

Jeffrey Parker, Georgia State University, USA

Gal Zauberman, Yale University, USA

Shalena Srna, The Wharton School, USA

Consumers often seek replacement options when their preferred option is unavailable. The current research demonstrates that slight variations in the initial decision-making process—which do not affect initial preferences—significantly impact consumers’ replacement choices. Specifically, we focus on a hierarchical decision structure (i.e., decision-tree) in which alternatives are first screened on a single attribute and then further screened on other attributes, in a sequential process, until an option is chosen. Integrating research on preference trees and runner-up options, we find that the specific decision-tree structure (i.e., the order of attributes in the tree) impacts consumers’ replacement choices. Consumers tend to replace their most preferred option with alternatives from the same branch (i.e., stick with attribute levels that were chosen earlier in the tree).

Such patterns may, at first, appear contradictory to existing literature showing that consumers tend to deemphasize the importance of screening attributes, and over emphasize post-screening (or “selection”) attributes (e.g., Chakravarti et al. 2006; Diehl et al. 2003). According to these findings, one would expect that consumers would be more likely to stick to later attributes in the sequence when choosing replacement options. However, this previous work (i) did not explore replacement choices, (ii) did not manipulate order of attributes in the tree, and (iii) examined nested hierarchical decision-trees; that is, contexts in which the initial screening criterion (e.g., “beef” vs. “fish”) substantively alters the options available in the subsequent stage(s) (e.g., “steak or roast-beef” vs. “sole or trout”). The current work examines contexts in which all combinations are feasible (i.e., non-nested decision-trees) and whether the order of attribute decisions in such non-nested trees impacts replacement choices. We find that consumer’s preference for a replacement option is affected by the tree structure, and that consumers tend to stick with earlier decisions they made in the tree. Seventeen studies demonstrate this extremely robust effect. We explore different possible mechanisms underlying the effect and discuss relevant literature.

In Study 1 participants chose between different pens, each described in terms of color (5 levels) and material (2 levels), resulting in 10 available color-material combinations. In a between-subjects design, participants either directly chose one of the 10 pens (control), or made their choice in a two-stage decision process (color first then material vs. material first then color). After learning that their chosen pen was unavailable, participants chose their replacement option by either keeping their choice of color and replacing the material or vice versa. The decision-tree structure significantly impacted participants’ replacement decisions. Participants that chose material first were more likely to keep the pen’s material (64%) compared to those that chose color first (38%,  $z = 2.72$ ,  $p < .006$ ; control condition =

47%). Participants' assigned attribute weights (using a constant-sum allocation task) showed a consistent and significant pattern. Eight additional studies replicated this robust effect across different decision contexts (e.g., cups, clocks, catering-services, food-items, hiring-decisions, paintings, visual-tasks). Additionally, the results were replicated with more than two hierarchy levels and when all attributes possessed the same number of levels. Further, the effect persisted in incentive compatible contexts and across different response and presentation modes. That is, participants tended to stick with their choice of initial attribute even when all alternatives were initially presented (screening, as opposed to choosing, format) and also when all replacement options were available for choice.

Exploring different potential mechanisms, we found the effect to persist when the initial choice was made for the participants either randomly (study 10) or by a third-party (study 11). That is, even when participants did not choose the original option, their choice of replacement option was still driven, in the hypothesized direction, by the decision-tree structure. Thus, choice-based explanations such as dissonance, self-perception, and reason-based choice, as well as explanations based on need for internal consistency or choice closure (suggested by Wright and Barbour 1977) do not fully account for the pattern of results (in Study 12 neither need for closure or internal consistency were found to moderate the effect).

Next, we examined whether the effect may be driven by inferences about attribute weights. In particular, previous literature suggested (and demonstrated) that decision makers attend to attributes by order of their importance (e.g., elimination-by-aspect). Therefore, it is possible that when the order of attributes in the tree is externally provided, decision-makers infer that initial attributes are more important and therefore tend to stick with their originally chosen branch. In Studies 13 and 14 it was made extremely salient to participants that the order of attributes was determined randomly. In Study 15 participants were asked to choose among 4 tasks that were described on completely meaningless attributes (letters and colors). The effect persisted, indicating that inferring weights from the order in the tree is not the main driver of the results.

Finally, in Study 16 we explored whether the effect is driven by a categorization and similarity judgments (e.g., Goldstone 1994, 2001; Livingstone et al. 1998). We find that decision-makers perceive alternatives that belong to the same branch in the decision-tree as more similar and perceive the action of switching branches as more extreme (i.e., a greater change). As in Study 15, participants chose among 4 tasks that were described on completely meaningless attributes. However, when learning about the unavailability of their chosen task, participants either received a positive cue about this task (triggering a motivation to replace this task with a similar task), or received a negative cue (triggering a motivation to replace the task with a dissimilar task). The effect replicated in the positive but not in the negative cue condition. Thus, indicating that decision-makers associate the decision-tree structure with a similarity judgment between alternatives. In Study 17, we find that the motivation to replace the original option with either a similar or a distinct option mediates the effect.

In the current investigation we attempted to isolate the effect (which is theoretically and substantively important) using different paradigms. The results lend support to a categorization process in which consumers construe alternatives that share a branch on the decision tree as more similar.

For more information contact: [roms@wharton.upenn.edu](mailto:roms@wharton.upenn.edu)

### *Indecisive Consumers and Sensitivity to Outside Options*

Marissa Sharif, University of California Los Angeles, USA\*

Stephen Spiller, University of California Los Angeles, USA

Consumers are often faced with salient outside options when deciding whether to select a focal option. For example, a consumer deciding whether to purchase a DVD from a display at Walmart may see another use for her money (e.g., a book). Choosing to buy one item means giving up at least one other potential option. Spiller (2011) found that when (and only when) consumers consider their opportunity costs, the more attractive their opportunity costs are on average, the less likely they are to buy the focal option. In the present research, we ask: which outside option receives the most weight in the focal decision? What individual differences moderate this selection?

Normative theory suggests that consumers should act as though they weigh the best outside option (and not the others) when deciding on a focal option. Previous research on consumer decision-making supports this, at least in some situations. When choosing an option from two partitions, one with a single option and one with multiple options, as long as the multiple-option partition is not considered to be a coherent set, individuals first compare each of the grouped items, identify their favorite from that group, and then compare the favorite to the lone alternative (Brenner, Rottenstreich et al. 1999, Sood, Rottenstreich et al. 2004). This suggests that individuals may give the greatest weight to the value of the best outside option and little weight to others.

Individuals differ in the extent to which they consider opportunity costs (Frederick et al., 2009; Spiller, 2011). However, it is unknown what individual differences account for people's sensitivity to the value of different outside options. One important candidate difference is indecisiveness. Prior research has identified three types of indecisive individuals using the Decision Behaviors Inventory (DBI): 1) Neurotic, characterized by difficulty choosing when presented with a variety of different options; 2) Perfectionistic, characterized by excessive information-seeking before choosing; and 3) Lackadaisical, characterized by a lack of concern with advanced preparation (Barkley-Levenson and Fox 2014). Although indecisive individuals have been shown to delay decisions, less is known about how or why they make particular choices. This research furthers this knowledge by exploring how one important component of decision-making relates to indecisiveness.

In three studies, we show that consumers are more likely to consider the value of the best outside option (and not less-attractive outside options) in their decision to accept the focal option or not. However, lackadaisical indecisive individuals place more weight on less attractive outside options and less weight on the most attractive outside options.

Studies 1a and 1b assessed how sensitive people are to an attractive outside option. 300 participants in each study read a scenario about a sale on their favorite DVD and decided whether to buy it or not (Frederick et al., 2009); Study 1b was a replication of 1a and results were consistent across both studies. Participants generated a preferred alternative use for their money (the outside option) and evaluated the attractiveness of the outside option and the DVD. Participants considered the outside option to be more attractive than the DVD ( $p < .001$ ). Participants were sensitive to the value of the attractive outside option and thus less likely to buy the DVD when their evaluation of the outside option was high ( $p < .01$ ). However, this relationship was moderated by lackadaisical indecisiveness ( $p < .01$ ). Low lackadaisical individuals were sensitive to the evaluation of the attractive alternative, but high lackadaisical individuals were insensitive. Neither perfectionistic nor neurotic indecisiveness moderated sensitivity. Although lackadaisical indecisive individuals were less sensitive to the attractive outside option, they were not less likely to purchase the DVD. Why not? One possibility is that they gave more weight to less-attractive outside options.

Study 2 assessed whether consumers' sensitivity to different outside options depends on those options' attractiveness and whether lackadaisical indecisive individuals place more weight on less attractive outside options. 100 participants made a series of 16 choices to buy or not buy \$5 gift cards over a series of 4 simulated "weeks" (one opportunity per "day" at a cost of 2 cents, with 4 days per week). Because participants had a weekly budget (2 cents), the future gift cards were potential opportunity costs. Participants were randomly assigned to a condition in which the next three gift cards were always displayed (Known) or never displayed (Unknown).



Condition influenced the relationship between lackadaisicalness and sensitivity to the attractiveness of the best outside option ( $p < .001$ ) and of the other outside options ( $p < .06$ ). As outside options were unknown in the Unknown condition, we focus on the Known condition. Participants were sensitive to the best outside option ( $p < .05$ ), and this sensitivity decreased with lackadaisicalness ( $p < .001$ ). In contrast, on average participants were not sensitive to the other outside options, but sensitivity increased with lackadaisicalness ( $p < .05$ ).

Study 3 tested lackadaisical individuals' sensitivity to less-attractive outside options by manipulating the value of the worst outside option. 300 participants were randomly assigned to one cell in a 2 (Status Quo vs. Not Status Quo) x 2 (Worst Outside Option Value: Medium vs. Low) between-subjects design. Participants chose among 3 different jobs: one manipulated status quo job, one attractive outside option, and one less-attractive outside option (medium or low value). We found that in aggregate participants were not sensitive to the manipulation of the worst outside option. However, lackadaisical indecisiveness interacted with this manipulation to affect choice of the status quo ( $p < .06$ ) such that lackadaisical indecisive individuals were less likely to choose the status quo (and more likely to choose the best outside option instead) if the worst outside option had a medium value than if it had a low value.

This research reveals that, in aggregate, individuals tend to be sensitive to the value of only the best outside option in their decision to buy the focal option. However, lackadaisical indecisive individuals place less weight on the best outside option and greater weight on lesser outside options when deciding on a focal option.

For more information contact: [marissa.sharif.2016@anderson.ucla.edu](mailto:marissa.sharif.2016@anderson.ucla.edu)

## ***Symposium: Effects on Time and Time Effects: The Interplay of Consumer Behavior and Time***

**Chair:** Gabriela Tonietto, Washington University in St. Louis, USA

### ***Starting Your Diet Tomorrow: People Believe They Will Have More Control Over the Future Than They Did Over the Past***

Elanor Williams, University of California San Diego, USA

Robyn LeBoeuf, Washington University in St. Louis, USA\*

Insanity, as the saying goes, is “doing the same thing over and over again but expecting different results.” People trying to diet, quit smoking, or be financially responsible may make a dozen attempts before they see meaningful results, if they see results at all (Polivy and Herman 2002). We argue that one important reason for this “failure to learn from failures” is that people expect to have greater control over future events than they would have had over identical past events. This is consistent with other work showing that the future (relative to the past) seems more premeditated (Burns et al. 2011), involves more willpower (Helzer and Gilovich 2012), and seems more rational (O’Brien 2015). Our work expands on this research, showing that for a variety of experiences, including negative and chance events, people believe they will have more control over the future than the past, and that this difference stems from an overgeneralized belief that the future is open and the past is fixed.

In our first study, participants rated whether they had more control over ten items, such as their diet, finances, and happiness, last month, or whether they will have more control next month. Participants also made a general control assessment, rating whether they believed they would generally have more control over their lives last month or next month. For all ten items, participants anticipated having greater control next month than they felt like they had last month (significantly so in all but two cases). The general assessment also

reflected a reliable belief that control would be greater in the future than in the past. Thus, participants anticipated having greater control over their lives in the near future than they had in the recent past.

To show this leads to a belief in greater future self-control, we used the idea of shifting preferences for “should” versus “want” movies (i.e., serious versus fun movies; Milkman et al., 2009). Participants were more likely to believe they would choose to watch a “should” movie four months from now than four months ago. Participants also thought that the movie decision would be more under their control in the future than in the past. This perception of control partially mediated the movie choice, suggesting that participants’ feelings of greater future control led them to believe they would be able to exert greater self-control over a future choice.

We also wished to demonstrate that people believe they will have more control over bad things as well as good things, to address the suggestion that this asymmetry might be another instantiation of optimism or a self-serving bias. Participants imagined that, either last fall or next fall, they were installing a new DVD player; the installation either succeeded or failed. Participants believed that the outcome, whether it was success or failure, would be more due to factors under their control in the future than in the past. There was no interaction between timeframe and valence of outcome.

People even expressed a belief in greater control over future chance events. Participants played a version of Battleship in which they guessed the placement of ships on another person’s board, in two rounds, without feedback. Between the rounds, they rated their control over the past round and then the upcoming round. Participants believed that they would have significantly more control over the outcome of the future round than the previous one, and that the outcome would be more due to their ability to guess where the ships are placed in the future round.

Finally, we wanted to examine the process underlying this asymmetry in perceptions of control. One note about this asymmetry is that it is actually valid from the perspective of the present: events that have already happened cannot be changed, but the future can still be influenced. However, there is no reason to expect, as our participants seem to, that past events were less controllable at the time that they originally happened than future events will be at the time that they will eventually happen. We suspect that participants substitute their current perceptions, from the vantage point of the present, for their perceptions of the past and the future when they actually occurred or will occur. To test this idea, we attempted to make the future feel as fixed and unchangeable as the past feels. Participants read either an excerpt of an essay that claimed that free will exists, or an excerpt that claimed that free will does not exist and one’s actions are predetermined. Then they completed a version of the DVD player scenario, in which the installation occurred either last fall or next fall. Participants in the free-will-exists condition showed the typical pattern of results, such that the installation seemed more under their control in the future than in the past. However, in the no-free-will condition, the future and past seemed equally controllable. Thus, by shifting participants’ perceptions of the openness of the future, we also shifted their beliefs about how controllable the future was relative to the past.

People believe that the future is more controllable than the past. Despite the future’s inherent uncertainty, people think they will be better able to control it, for good or ill. They seem to substitute their current perceived ability to control the past and the future for their ability to control the past in the past and the future in the future. This asymmetry in beliefs about control may lead people to repeat the same mistakes, with hope but little chance of getting a different result.

For more information contact: ewilliams@ucsd.edu

## *Movement through Time and Space Shapes Psychological Distance*

Eugene Caruso, University of Chicago, USA\*

Leaf Van Boven, University of Colorado Boulder, USA

Time is an abstract concept that is only experienced indirectly, which makes the very notion of time difficult to comprehend. Once people move beyond the narrow spans of time that their biological clocks, broadly speaking, are capable of tracking, they conceptualize time by building mental representations that draw from their direct experience with spatial distances (e.g., Boroditsky, 2000; Lakoff & Johnson, 1980, 1999). The idea that travel through time has a direction—reflected in numerous metaphors, such as the “arrow of time” and “moving through time”—implies a spatial relationship. As a result of this mapping of time onto space, both literally and metaphorically, people’s movement through space can affect their representation of movement through time (Boroditsky, 2000; Casasanto & Boroditsky, 2008; Miles, Nind, & Macrae, 2010).

Here we explore two implications of the metaphorical mapping of time and space. We suggest that people’s experience of movement through time is analogous to their experience of movement through space in that they perceive the distance between the self and future events as continually diminishing whereas they perceive the distance between the self and past events as continually increasing. Just as diminishing spatial separation makes objects seem spatially closer and increasing spatial separation makes objects seem spatially more distant, diminishing temporal separation makes events seem temporally closer and increasing temporal separation makes events seem temporally more distant. We hypothesize that this spatial metaphor of events in time implies two phenomena. First, physical movement toward events in space should reduce their psychological distance to the present. Second, there should exist a fundamental asymmetry in the psychological distance of past and future events whereby future events are psychologically closer to the present than past events of equivalent objective distance. We tested these predictions in a series of studies.

Study 1 tested our prediction that physical movement toward events in space would reduce their psychological distance to the present. Participants wrote down six personally-relevant events (e.g., “my final exams”) on separate sheets of large paper, which an experimenter taped to a door at the end of a long hallway. All participants reported how psychologically distant each event was. Some participants made these evaluations from a stationary position approximately 4 feet away from the posters; some participants made these evaluations from a stationary position approximately 30 feet away from the posters; and some participants made these evaluations after physically moving toward the posters (i.e., walking from 30 feet away to 4 feet away) or away from the posters (i.e., walking from 4 feet away to 30 feet away). We found that people who walked forward reported that these events were psychologically closer than did people who walked backward or who were in a close or far stationary position.

The next two studies tested whether future events are psychologically closer than past events of equivalent objective distance. In each study, participants were asked to imagine a point in either the past or in the future, and to report the point’s psychological distance. When considering specific times (one month, one year; Studies 2a-2b) or specific events (Valentine’s Day; Study 3), people reported that the future was closer than the past.

In Study 4, we experimentally reversed the spatially-grounded arrow of time by manipulating the direction of participants’ apparent physical movement, which we reasoned would influence their orientation to the past and future. Some people had the (virtual) experience of moving forward in space, consistent with their natural orientation of thoughts, whereas others had the (virtual) experience of moving backward in space, reversing their natural orientation of thoughts. Consistent with our predictions, we found that people’s virtual movement moderated the temporal asymmetry in psychological distance, such that backward movement eliminated the tendency for future times to be psychologically closer than past times.

The existence of this temporal asymmetry has important implications for theories of psychological distance that assume temporal symmetry (e.g., Trope & Liberman, 2010), and for theories of episodic memory that assume people remember the past in largely the same way that they imagine the future (e.g., Addis, Wong, & Schacter, 2007). More broadly, we believe that the temporal asymmetry in psychological distance reflects a general “bias toward the future” whereby people are psychologically oriented toward the future more than the past (Parfit, 1984). This future orientation is highly functional, as future events can typically be acted upon more successfully than past events. The fact that action can facilitate the realization of future desires but not past ones may help explain why people devote more resources to prepare for things that lie ahead than for things that lie behind. This is in part why it makes sense for car windshields to be bigger than rearview mirrors and for the meteorologist to discuss the weather for the upcoming week rather than the preceding one. Thus, just as people mobilize resources to prepare for approaching sights and sounds, they apparently have a more general tendency to prepare for the (approaching) future by reducing its psychological distance from the here and now.

For more information contact: [ecarus@chicagobooth.edu](mailto:ecarus@chicagobooth.edu)

### ***The Effect of Temporal Organization on Subjective Time Perception and Consumption***

Gabriela Tonietto, Washington University in St. Louis, USA\*

Selin Malkoc, Washington University in St. Louis, USA

Stephen Nowlis, Washington University in St. Louis, USA

Just as a year is organized around significant dates (e.g., holidays) that act as temporal landmarks (Peetz and Wilson 2012), a day is organized around set activities (e.g. scheduled or routine tasks; Southerton 2003). While prior research has examined the influence of temporal organization on perceptions of the scheduled activity, (Tonietto and Malkoc 2015) and one’s overall day (Southerton 2003), prior work has not yet studied how scheduling tasks might influence how consumers perceive the time surrounding the activity. We fill this gap by exploring the effect of such temporal organization on time perception and consumption. We propose that the time leading up to a previously scheduled task feels subjectively contracted. That is, a time interval feels subjectively shorter if it directly precedes a scheduled activity. We further theorize that this temporal contraction makes the time preceding the scheduled activities feel wasted and nonproductive, making consumers less willing to engage in other experiences, which they predict will be less enjoyable.

In Study 1, we first sought to demonstrate that an interval of time directly preceding a scheduled activity (vs. not) feels subjectively contracted and nonproductive. As such, participants rated how long (very little time to a lot of time) they perceived the time and their ability to be productive from 11am until noon in either the presence (lunch at noon) or absence (lunch at 1pm) of an adjacent scheduled task. As predicted, the same one-hour period felt significantly shorter and less productive when adjacent to (vs. separated from) a scheduled task.

We next tested the predicted downstream consequences of this temporal contraction, whereby consumers would become less likely to engage in experiences during the time preceding a scheduled task. As such, in addition to time perception, participants in Study 2 indicated their likelihood to book a 45-minute massage. This study had a further goal of ruling out the potential effect of savoring for the scheduled activity. That is, it could be that time feels shorter as consumers excitedly anticipate the scheduled task. If so, then one would expect the dread associated with anticipating a negative task to show the opposite effect. To test this, Participants imagined either an hour available later (control, no scheduled activity), an hour available before a dinner engagement (desirable activity), or an hour before a dentist appointment (undesirable activity). Countering a savoring based account, we find that participants were less likely to book a massage when it preceded both the desirable and undesirable activity. Further, this was mediated through subjective time perception.

Importantly, anticipating a fun dinner did not differ from a dentist appointment, demonstrating that the mere presence and not the valence of the adjacent activity drives the effect.

The purpose of Study 3 was to test whether this reluctance to engage in a desirable activity (massage) would further extend to undesirable activities. In particular, it is possible that consumers might be more motivated to do activities they want to get over with when time feels scarce. However, we argue that consumers see the time preceding scheduled tasks as wasted and nonproductive. Thus, we predict that they would be no more likely to engage in undesirable experiences. Supporting this, participants were less likely to book a 45-minute massage (desirable experience) or a 45-minute annual physical exam (undesirable experience) prior to a scheduled task. They also predicted both experiences would be less pleasant when followed by another activity, which was mediated through subjective time perception.

In Study 4, we sought to test whether increasing the length of objective time would alter the results. We find that participants were less likely to book a 45-minute massage prior to a scheduled task whether they had one hour or two hours available and predicted lower enjoyment if they were to get the massage at that time. These results indicate that even when time available is longer, consumers still perceive time as subjectively insufficient and shy away from experiences when they precede a scheduled task. Importantly however, we predict that once the target activity becomes sufficiently short, we should no longer find the effect. This is, tasks that are short enough to be completed productively during the time interval should not be influenced by the presence of a scheduled activity. Supporting this, participants in Study 5 were less likely to read a few chapters of a book before an adjacent task, but were just as likely to read a few pages. Furthermore, participants indicated that they would spend less time (in minutes) reading the remaining chapters but not the remaining pages. This supports the idea that once the contracted time interval feels sufficient, the presence of an adjacent activity no longer matters.

In the final study, we demonstrate that the observed effects uniquely occur in the time leading up to but not following a scheduled task. We argue that the effect is driven by perceived time contraction and not an unwillingness to plan multiple activities back-to-back. If consumers simply wished to keep activities separate, then we should expect reduced likelihood to engage in experiences both before and after a scheduled activity. However, in line with our proposed theory, participants were less likely to book a massage before a scheduled activity than either after that activity or control, which did not differ. Further, before, but not after, an adjacent task, participants thought the massage would be less enjoyable, and this was mediated by subjective time perception. These results indicate that our results are not driven by pure sequencing and only apply to the perception and consumption of time prior to a scheduled task.

In sum, six studies demonstrate that the same amount of time feels contracted if it directly precedes an upcoming scheduled task. This then reduces the likelihood of engaging in other experiences, which are predicted to be less enjoyable. This work enriches our understanding of what drives subjective time perception, as well as its consequences. Our results establish that how consumers structure their day has important implications for how they choose to consume their time.

For more information contact: [tonietto@wustl.edu](mailto:tonietto@wustl.edu)

## ***Individual Papers: The influence of financial considerations on consumer behavior***

### ***Responses to Interest Rate Increases: An Urgency Bias in Repayment Behavior***

Shirley Zhang, University of Chicago Booth School of Business\*

Abigail Sussman, University of Chicago Booth School of Business

Christopher Hsee, University of Chicago Booth School of Business

Consumers often encounter changing interest rates, for example, when they receive a low introductory offer on a credit card, or a variable rate mortgage. Changing interest rates can complicate already difficult financial decisions around debt repayment. We examined how the timing of future interest rate increases influences these decisions. We found that when the interest rate is expected to increase in the near term, people pay their debt more slowly than when it is expected to rise in the future, even though they incur more accumulated interest overall in the former case. We label this pattern the urgency paradox-- consumers subsequently increase their commitment to repaying debt in response to perceived urgency (anticipation of a future rate increase) rather than to actual urgency (higher rate overall).

Study 1 demonstrated the urgency paradox. Participants imagined they had taken out a loan a while ago. The loan's interest rate would increase from 0% to 5% either in one month or in five months. The loan had to be repaid in full (principal plus interest) in a single payment, and the interest would continue to accrue until the loan was completely repaid. Participants stated when they would repay the loan. Participants in the five-month condition decided to pay off the loan significantly sooner than those in the one-month condition ( $M = 10.85$  vs.  $16.32$  months,  $p < .01$ ), although the accumulated interest (total cost) was higher in the one-month condition.

Study 2 replicated the urgency paradox in a setting with real consequences. Participants played a game that simulated a debt payment process. They began the game in debt, owing the experimenters points, and they were required to repay their debt before they could exit the game. The debt would increase at a steady rate throughout the game beginning either immediately, or 70 seconds after the start of the game. To earn points, participants were given a choice between a pleasant or unpleasant task. The unpleasant task paid more, allowing them to repay their debt faster. We found that participants were more likely to choose the higher paying, unpleasant task when their debt would begin rising after 70 seconds than when it would begin rising immediately (76% vs. 60%,  $p = .029$ ).

We propose that two psychological factors together contribute to the urgency paradox: sensitivity to change and perceptions of achievability. As a result of sensitivity to change, consumers react more strongly to the timing of a rate change than to the level of the static interest rate. Subsequently, they focus on the timing of the rate rise and may take this as an implicit goal for paying off their debt. However, selection of this goal depends on perceptions of achievability. A consumer will commit to repaying all of her debt before the rate rises, but only if she believes this goal is achievable. Otherwise, the timing of the rate increase will not factor into the repayment decision. Therefore, consumers will repay loans faster only when the timing of the rate change is (a) distant enough that it allows them to plausibly repay the loan before the rate change, but is (b) near enough that they would not be motivated to repay the loan before the rate change if the loan remained at a static rate.

To test this possibility, Study 3 examined sensitivity to change. Participants were randomly assigned to one of four conditions: two static rates (2% vs. 5%) and two changing rates (increase from 2% to 5% in one vs. four months). Similar to Study 1, participants imagined that they had taken out a loan and stated when they would repay it. The two changing rate conditions (one-month and four-month) replicated the urgency paradox ( $M = 8.37$  vs.  $6.12$  months,  $p < .05$ ), but participants were indifferent between the two static rates. Furthermore, participants repaid the loan significantly sooner when the rate would increase in four months than if the rate stayed at either 2% or 5% ( $ps < .05$ ), showing that participants were more sensitive to a changing rate than to a static (high) rate.

Study 4 examined the complementary explanation, perceptions of achievability. This study included a range of dates when the rate change occurred. These dates included periods when people would not plausibly be able to repay the debt (this month), they could repay their debt fairly easily (8 months, 12 months), and they could repay their debt, but only if motivated to do so (4 months). We found that participants repaid earlier in the 4 month condition than in each of the other conditions ( $ps < .05$ ), indicating that participants repay loans faster only when the timing of the rate change is distant enough to allow them to plausibly repay the loan before the rate change, but near enough that they would not be motivated to repay the loan before the rate change otherwise.

Studies 5 and 6 tested two moderators: evaluation mode (Hsee & Zhang, 2010) and contemplation. Study 5 replicated the urgency paradox in single evaluation, but participants chose the opposite in joint evaluation. Study 6 showed that the urgency paradox disappeared when we asked participants to focus on the rate itself and consider whether the increased rate was too high or too low before they made their decisions. These moderators provide additional evidence for the proposed mechanism. They suggest that participants will respond to the absolute interest rate when their attention is directed away from the change and towards the overall economic cost, and provide evidence that the basic pattern is a bias that cannot be explained by normative economic accounts.

This paper has provided evidence that consumers will look to the timing of rate increases as a deadline, and that perceptions of achievability can help explain when we turn to this external, and arguably arbitrary, cue for motivation. Our findings suggest that highlighting a future rate increase in the near future may discourage consumers from paying their debt soon, while highlighting a rate increase in the more distant future may encourage consumers repay their debt faster.

For more information contact: shirleyzyw@gmail.com

### ***Interest-Free Financing Deals: How Different Labels Impact Consumers' Preferences for Pre- vs. Postpayment***

Johannes C. Bauer, University of St. Gallen, Switzerland\*

Vicki G. Morwitz, New York University, USA

## **Introduction**

Interest-free financing offers consumers the possibility of paying for high-priced goods with monthly installments and no interest charges. Slogans such as “*Buy Now, Pay Later*” can be found at many retailers for a variety of products (e.g., electronics) and services (e.g., vacations). Even though interest-free deals can save consumers money by allowing them to defer payments (cf. time-value-of-money), behavioral research suggests that, for certain purchases (e.g., vacations), people prefer to prepay rather than taking advantage of an interest-free loan (e.g., Prelec and Loewenstein 1998). This project will demonstrate that different ways of communicating an interest-free offer influence peoples’ payment preferences. By showing that different semantic labels of otherwise equivalent financing deals affect consumers’ demand for credit, we contribute to research on financial decision making and promotional framing.

## **Conceptual Background**

Research on financial decision making has shown that people aim to match a good’s benefit stream with the payment stream of the loan and try to avoid financing plans whose loan durations exceed the life of the durable (Hirst et al. 1994). This finding is consistent with mental accounting theory (Thaler 1985) which posits that people establish mental accounts for the benefits and costs of a specific transaction and that acts of consumption and payment can generate pleasure and pain, depending on whether the balance of these mental accounts is in the black or in the red (Prelec and Loewenstein 1998). Since various modes of payment (e.g., cash, financing plans) differ in the timing of the actual payments and many product types (e.g., durables, experiential goods) differ in the sequence of benefits, research suggests that peoples’ payment preferences depend on the nature of the product (e.g., Patrick and Park 2006). In their classic article on mental account of savings and debts, Prelec and Loewenstein (1998) demonstrated that 76% of the people preferred to pay for a \$1,200 washer and dryer combination with “*six monthly payments of \$200 each during the six months after the washer and dryer arrive*” (i.e., postpayment), whereas 63% chose to pay for a \$1,200 vacation with “*six monthly payments of \$200 each during the six*

*months before the vacation*” (i.e., prepayment). Rather than minimizing the net present value of the transaction, the majority of people preferred to prepay for the vacation because they wanted to avoid paying for a good that does not provide any more benefits. In this research, we will show that labeling Prelec and Loewenstein’s (1998) financing offer as a *0% APR special financing promotion* can significantly increase peoples’ demand for credit. Like other studies on promotional framing (e.g., Inman et al. 1990, 1996), our results demonstrate that redundant value cues can affect consumers’ reactions to otherwise equivalent deals.

## Studies and Results

Five studies test our “labeling” hypothesis. In all studies, we build on Prelec and Loewenstein’s (1998) original scenario, but manipulate the framing of the postpayment option: (1) “Make six monthly payments of \$200 [...]” in the no deal condition vs. (2) “Use a 0% APR special financing promotion and make six interest-free monthly payments of \$200 [...]” in the 0% deal condition.

Study one was a 2 (label: no deal vs. 0% deal) x 3 (product: washer-dryer vs. TV vs. vacation) between-subjects design. Consumers’ payment preference (“Which option would you prefer?”) was measured with a binary variable (0=Prepayment / 1=Postpayment). Logistic regression analysis yielded a significant product x label interaction ( $p=.01$ ) which indicated that labeling the financing offer as a 0% deal increased consumers’ preference to postpay for the vacation (No deal: 12.6% vs. 0% deal: 32.7%;  $p<.001$ ), but not for the TV (No deal: 71.9% vs. 0% deal: 67.1%;  $p>.20$ ) and the washer and dryer (No deal: 80.6% vs. 0% deal: 78.6%;  $p>.60$ ).

In study two, we focused on the vacation as our target good, but highlighted its utilitarian value to one group and its experiential value to a second group of participants (Levav & McGraw 2009). Logistic regression analysis produced a significant main effect of deal label ( $p<.01$ ) with preference for postpayment rising from 12.0% to 20.8% ( $p=.08$ ) in the utilitarian condition and from 12.7% to 27.8% in the hedonic condition ( $p<.01$ ). Thus, the effectiveness of the 0% deal label does not depend on the nature of the product as utilitarian or hedonic.

In study three, we again held the product constant (i.e., bike), but shifted participants’ focus of attention either to its material or experiential aspects (Carter & Gilovich 2010, 2012). Logistic regression analysis yielded a significant focus x label interaction ( $p<.05$ ) and confirmed that the 0% deal label increases consumers’ preference for postpayment when they focused on the bike’s experiential aspects (No deal: 54.2% vs. 0% deal: 72.5%;  $p=.06$ ). In contrast, when consumers focused on the bike’s material aspects, the 0% deal label did not affect their preference for postpayment (No deal: 74.5% vs. 0% deal: 65.3%;  $p>.30$ ).

In study four, we employed the experimental design used in study one. Besides replicating the previous findings, study four provided initial evidence for the underlying psychological process. In a moderated mediation analysis, we showed that the 0% deal label provides justifiable reasons for consumers to postpay the vacation: Self-justification (measured with three items) fully mediated the positive effect of the 0% deal on consumers’ preference to postpay for the vacation (indirect effect=1.62, 95% CI: .71 to 2.63).

In study five, we separated the effects of various semantic cues (e.g., 0% APR vs. special vs. financing promotion vs. interest-free) and found that the term “interest-free” drives our labeling effect ( $p<.01$ ). Again, self-justification fully mediates the positive effect of the “interest-free” cue on peoples’ preference to postpay for the vacation (indirect effect=1.96, 95% CI: .52 to 3.53).

## Discussion

Our results show that framing an interest-free financing offer as a *0% APR special financing promotion* can significantly affect consumers’ demand for credit. In five studies, we demonstrate that the 0% deal label significantly increases consumers’ preference to



postpay for an experiential good. In a next study, we aim to manipulate the “need for self-justification” to nail down the underlying psychological process.

For more information contact: johannes.bauer@unisg.ch

### ***Almost Everyone Misunderstands the Benefit of Diversification***

Nicholas Reinholtz, University of Colorado, USA\*

Philip M. Fernbach, University of Colorado, USA

Bart de Langhe, University of Colorado, USA

Diversification—investing in many imperfectly correlated assets—reduces exposure to risk without sacrificing expected returns. Some assets in a diversified portfolio will perform better than expected and others will perform worse, but the value of the portfolio will be less volatile as these unpredictable deviations will tend to offset. Despite this benefit, many people are undiversified (Campbell, 2006; Goetzmann & Kumar, 2008). For example, a typical individual investor holds a portfolio with only four stocks (Barber & Odean, 2001).

While several explanations have been proposed to account for improper diversification, we explore a more fundamental question: Do investors understand the benefit provided by diversification?

Understanding how diversification affects portfolio performance requires understanding the distributional properties of a sum of random variables. This may be easy for statisticians, but most people have poor statistical intuitions (Lipkus, Samsa, & Rimer, 2001). Moreover, people may lack the financial literacy required to apply this knowledge correctly (Lusardi & Mitchell, 2007).

We demonstrate two pervasive errors in people’s beliefs about diversification. First, many people believe that diversification increases, rather than decreases, the volatility of a portfolio. This error is particularly common among people low in financial literacy, and appears to result from a judgment of representativeness: Because diversification involves investing in many unpredictable assets (vs. only a few), it feels like it should increase the aggregate unpredictability of the portfolio. This is analogous to conflating the properties of an outcome distribution with the properties of the generating mechanism (Kahneman & Tversky, 1972, 1973).

Second, many people incorrectly believe that diversification increases the mean performance of a portfolio. This error is most common among those high in financial literacy and seems to result from a misunderstanding of financial advice: People may know that diversification is a good investment strategy but associate this with an increase in the mean, rather than a decrease in volatility. This is consistent with previous work suggesting the central tendency of a distribution is more salient than the degree of dispersion (Obrecht, Chapman, & Gelman, 2007).

In Studies 1A–1F, we had people make forecasts for diversified and undiversified portfolios using a graphical, histogram building tool (Goldstein & Rothschild, 2014). In effect, this tool yields a subjective probability distribution of each participant’s beliefs about the future value of each stock portfolio. We found that many people, but especially those low in financial literacy, expected greater variance in possible stock prices (i.e., more risk/volatility) from the diversified portfolio. Further, most people, but especially those high in financial literacy, expected a greater mean stock price (i.e., better returns) from the diversified portfolio. These biases are inconsistent with inferences about portfolio construction, as they occurred even when stocks in the portfolios were “randomly selected” or explicitly known.

In Study 2 we explored possible explanations for these biases by manipulating what people thought about before forecasting the performance of a portfolio. Participants who first thought about how the individual stocks in the portfolio might perform expected greater unpredictability from the portfolio, while those who instead thought about the value of diversification expected greater returns from the portfolio.

Finally, in Studies 3A and 3B we explored possible downstream consequences using a portfolio construction task. We found people tended to create portfolios that mismatched investor's risk tolerances in ways consistent with the false beliefs documented in previous studies. Specifically, those low in financial literacy tended to give a less diversified portfolio to an older, risk-averse investor than they gave to a younger, risk-seeking investor.

For more information contact: nreinholtz@gmail.com

***Does debt beget debt? Asymmetric mental accounting for debt vs. borrowed money may increase willingness to borrow***

Aimee Chabot, The Fuqua School of Business, Duke University, USA\*

Christopher Bryan, Booth School of Business, University of Chicago, USA

Julian Parris, SAS Institute, USA

**Background.** The fastest growing type of consumer debt, student debt recently surpassed outstanding credit card debt for the first time and has increased more than fivefold since 1999. Three experiments (total N=996) examine a potential consequence of rising debt levels: as existing debts grow, people may become willing to borrow even *more*.

This hypothesis is supported by a novel theory that combines elements of prospect theory and mental accounting to propose that debt is accounted for as a cumulative loss (i.e., within a single mental account), while each new decision to borrow additional money is accounted for as a fresh gain (i.e., in a separate mental account). Therefore, for subsequent borrowing decisions, the marginal subjective cost of debt should diminish while the marginal subjective gain of borrowed money should remain constant, resulting in an increased willingness to borrow as one's debt balance increases. Such a reaction to larger debts would be ironic and strongly counter-normative because, holding constant repayment schedule and interest rate, it is more costly to add to larger debts than to smaller ones. Additionally, those who owe the most can often least afford to take on these additional costs.

**Method.** In three studies, we randomly assigned participants ( $N=997$  UCSD students) to imagine having current student debt balances of either \$4,500 (low) or \$45,000 (high) and asked them whether they would take on additional debt to cover one, both, or neither of two additional expenses: (1) \$1,200 for \$30/week in discretionary spending (e.g., going out to eat, improving one's immediate comfort with no potential for future return) and (2) \$1,200 for a supplemental course or tutoring (e.g., a GRE prep course or similar investment in future earning potential). Study 2 tested whether willingness to borrow continues to increase as loan balances reach extremely high levels (\$450,000). Study 3 was intended to provide a supplemental replication as well as rule out an anchoring explanation by adding a condition in which participants considered a monetary value equal to the high debt condition in a context unrelated to debt.

**Results.** Across Studies 1-3, larger hypothetical student loan amounts increased participants' willingness to borrow even *more* money ( $p$ s = .001, .03, and .007, respectively). Participants were insensitive to differences between high (\$45,000) and extremely high (\$450,000) debt conditions, suggesting the existence of a debt threshold at which borrowers become insensitive to additional increases (Study 2). Considering a large number outside the context of debt did not increase willingness to borrow, ruling out the possibility that an

irrelevant anchoring mechanism could explain the observed effect (Study 3). A meta-analysis of Studies 1-3 indicates a small- to medium-sized effect of low vs. high loan size on borrowing decisions (Cohen's  $d=.33$ ).

Participants' actual debt predicted borrowing decisions only when a hypothetical debt amount was not assigned (i.e., in the anchor condition); here, greater actual debt was associated with a greater willingness to borrow. An analysis of the types of expenses that participants chose to borrow for (i.e., expenses offering present vs. future value) found no evidence that the high debt condition differentially increased willingness to borrow for expenses with a potential future return relative to those with no such potential, suggesting that the present findings cannot be explained by a risk seeking in the domain of losses account.

**Conclusions and Discussion.** Across three experiments, larger hypothetical loan balances increased willingness to take on additional debt. However, individuals were insensitive to differences between the high (\$45,000) and highest (\$450,000) debt conditions, suggesting the existence of a debt threshold at which willingness to borrow plateaus. Risk seeking in the domain of losses was considered as an alternative explanation for an increased willingness to add onto large student loans, but was found to be insufficient to explain the observed effect. To our knowledge, this is the first experimental demonstration of a general increased willingness to add to larger (vs. smaller) existing debts.

To explain these findings, we propose that debt is accounted for as a cumulative loss, while the purchasing power gained from each instance of additional borrowing is accounted for as a fresh gain. Consequently, as one's debt balance increases, the marginal subjective cost of additional debt decreases while the subjective impact of obtaining an additional gain remains constant (and large). This serves to increase willingness to borrow as the marginal value of the gain increasingly outweighs the corresponding loss. Although the focus of the current paper was on student debt, a similar psychology should apply to other forms of consumer debt, most notably credit cards.

A possible explanation for this finding, and critique of the current design, is that participants might make different attributions about the "kind of person" they must hypothetically be based on the amount of debt they had been asked to imagine carrying. To mitigate this concern, it was clearly specified that the existing debt balance they were being asked to imagine had been taken out to cover "essential expenses such as tuition, books, and housing." While participants may have then drawn inferences about their hypothetical financial situation, this should work in the opposite direction of our observed effect. That is, if a student had needed to take out a large loan in order to cover tuition and essential living expenses, the most reasonable inference would be that the borrower was of limited financial means. Such an inference would be expected to decrease willingness to borrow, but instead we observe the opposite.

Overall, these findings not only support a novel theoretical analysis of the psychological factors affecting consumer borrowing decisions but have profound practical implications: those *needing* to take on large debts—specifically, consumers with limited financial security—may become more willing to add to their debt, potentially further contributing to economic inequality and its associated social and policy consequences.

For more information contact: [aimeechabot@gmail.com](mailto:aimeechabot@gmail.com)

## ***Individual Papers: Consumer Decision Making***

### ***Skiping a Beat: Cardiac Vagal Tone and Risky Decision Making***

Mehmet Yavuz Acikalin, Stanford University, USA\*

Baba Shiv, Stanford University, USA

When we make risky decisions, the possibility of undesirable outcomes can elicit negative emotional responses that influence our risk preferences (Loewenstein et al., 2001). For this reason, how we regulate these emotions can determine the how much risk we are willing to take. Emotions are regulated by both higher-level cognitive and lower-level physiological processes. For instance, we can regulate how we feel at the higher-cognitive level by reappraising the source of an emotion or by suppressing it (Ochsner & Gross, 2005). Such regulation strategies have been demonstrated to influence decision-making (Gross, 2013). In addition to these cognitive strategies, which require conscious effort, emotions are also regulated automatically at the physiological level by the autonomic nervous system (ANS). The parasympathetic subdivision of the ANS down-regulates arousal, respiration, heart rate, and attention; aiding emotion-regulation by controlling visceral states (Porges et al., 1994). Unlike cognitive emotion-regulation strategies, the impact of which has been examined in various decision-making contexts, little has been documented about the role of the physiological regulation of emotion in decision-making. The primary goal of this research is to fill this gap in the literature. Specifically, our aim is to delve into the role of emotion-regulation on decision-making from a physiological perspective, focusing on the effects of parasympathetic activity on risk aversion.

In order to understand how the physiological regulation of emotion can influence decision-making, we draw upon the well-documented work on to the vagus nerve, the key component of the parasympathetic nervous system (Critchley & Harrison, 2013). We specifically focus on a non-invasive measure, cardiac vagal tone (VT), measured via respiratory sinus arrhythmia (RSA; Berntson et al., 2007). RSA is a non-invasive proxy for vagal—and thus, parasympathetic—activity and autonomic flexibility (Porges et al., 1994). The regulatory effects of vagal activity on emotional function is ubiquitous in the literature and, thus, VT is widely accepted as an indicator of parasympathetic involvement in the regulation of emotion by physiological means (e.g. Porges, 1996; Gottman & Katz, 2002). Naturally, VT is a strong predictor of stress vulnerability (Porges, 1995). For example, higher resting VT has been shown to protect children from marital conflict (El-Sheikh et al., 2001).

In this research, we examine whether the influence of VT extends to decision-making under risk and uncertainty. Akin to how cognitive reappraisal strategies reduce arousal (Sokol-Hessner et al., 2009) and loss-aversion (Sokol-Hessner et al., 2012) in risky decisions, we posit that increases in VT, indicating improved physiological regulation of emotion, ought to similarly predict reduced risk aversion. In three experiments, where we either measure VT as an individual difference or experimentally manipulate VT using specific breathing techniques, we assess risk preferences in two risky decision-making tasks with built-in incentive compatibility, the Balloon Analog Risk Task (BART; Lejuez et al., 2002) and the Gneezy Risk Task (GRT; Gneezy & Potters, 1997). Together, these experiments document the modulation of risk aversion by vagal activity, as indicated by VT.

In Experiment 1, a correlational study, by measuring VT of free-breathing participants while completing BART, we found that confirming our hypothesis, participants with higher levels of VT showed less risk aversion, indicated by a significant positive relationship between RSA and the adjusted number of pumps ( $p < 0.0005$ ).

In Experiment 2, we manipulated VT experimentally by regulating the breathing of participants, randomly assigning them to a regular-breathing (control-normal VT) or a deep-breathing (high VT) condition. A manipulation-check confirmed that the breathing manipulations were effective. Participants in the deep-breathing condition had significantly higher RSA levels compared to the control condition ( $p < 0.0001$ ), which did not differ from the average RSA of the free-breathing participants in Experiment 1 ( $p > 0.36$ ). The results confirmed our hypothesis, and participants in the deep-breathing condition took significantly more risk than participants in the regular-breathing condition in both BART ( $p < 0.021$ ) and GRT ( $p < 0.027$ ).

In Experiment 3, we investigated whether our breathing manipulations caused any mood effects using the Brief Mood Introspection Scale (BMIS), in addition to addressing whether our main finding in GRT holds controlling for mood measurements. The results replicated our GRT findings in Experiment 2 ( $p < 0.04$ ). There were no significant differences between groups in the Arousal-Calm dimension ( $p > 0.35$ ), or the Pleasant-Unpleasant dimension ( $p > 0.60$ ) of BMIS. Controlling for mood effects, which had non-significant coefficients ( $p > 0.30$  for both), breathing manipulation was still a marginally significant predictor of risk taking in GRT ( $p < 0.09$ ).

These findings are congruent with previously limited and correlational research indicating that VT might predict how individuals deal with stressors in decision-making contexts. For instance, resting VT has previously been found to correlate with the magnitude of stress response to (Dulleck et al., 2011) and the likelihood of rejecting unfair offers in ultimatum games (Sütterlin et al., 2011). Further, this pattern of results is consistent with studies on risky decisions that focus on emotion-regulation from a higher-level cognitive perspective such as cognitive reappraisal modulating the experience of negative emotions and influencing loss aversion (Heilman et al., 2010).

Our experimental manipulation of VT using breathing exercises highlight how immediate the cognitive and behavioral consequences of a change in parasympathetic activity can be. Our participants started eliciting differential behavior in sophisticated decision-making tasks beginning merely a minute after a getting in sync with a deep-breathing rhythm, before they even detected any breathing-driven influences in their emotional states. This can have important implications in a myriad of consequential contexts, such as risky decisions in the medical, political, and business domains.

In sum, we demonstrate that the regulatory effects of VT on emotional function extend to risky decision making contexts. Put simply, how good our bodies are at handling the affective consequences of experiencing uncertainty predicts risk aversion.

For more information contact: mya@stanford.edu

### ***The Nature and Extent of Post-Reward Crowding-Out: The ‘Effort-Balancing’ Account***

Indranil Goswami, University of Chicago, USA\*

Oleg Urminsky, University of Chicago, USA

A large and influential literature on intrinsic motivation has argued that conditional incentives can undermine or crowd-out intrinsic task interest, reducing engagement when rewards are stopped (Deci, Koestner, & Ryan, 1999). This research has resulted in widespread skepticism among practitioners and academics alike about using incentives in interventions. However, recent field studies examining the long-term effects of temporary incentives have failed to document negative effects. We propose a new effort-balancing account, which suggests that the post-reward crowding-out effect often represents a temporary preference for a break after exerting effort, rather than a change in either task perception or in beliefs about own preferences. As a result, post-reward crowding-out is momentary and consistent with neutral or even positive long-term effects of incentives. Furthermore, the justification for a break is weakened when the experience is rewarding or when the task is less effortful, and therefore the proposed account predicts no crowding-out in such contexts. In a series of controlled lab studies we test these novel predictions of our account, present a meta-analysis of our results, and rule-out competing explanations.

In our experimental paradigm, designed to test the extent of crowding-out, participants make a series of 30 choices between doing a work task (a math problem) or a leisure task (watching a video). Each task took 30 seconds, and participants only saw the specific math problem or video after making each choice. Choices were divided into three rounds – pre-incentive, incentive, and post-incentive.

Participants in the incentive conditions were informed of the amount and duration of the incentive (e.g., 5 cents per correct answer for the next 10 tasks) at the beginning of the incentive round, after the pre-incentive round was completed.

In Study 1 (N=77), 67% of the online participants did the math task in the pre-incentive period. When incentives were available, the reward group increased their effort and chose to do the math task 88% of the time ( $p < .001$ ). However, immediately after the rewards were stopped, the proportion of math attempts fell by 14 percentage-points (53%,  $p = .06$ ) in the first task of the post-incentive round. After this momentary drop in engagement, choices of the math task returned to baseline levels, with no evidence of net crowding-out in the post-incentive round ( $t(37) < 1$ ). Using a hierarchical regression model that compared the incentive and control conditions, we find significant momentary crowding-out ( $z = -2.6, p < .01$ ).

In a combined meta-analysis of all data collected across studies (N=1225), we find strong crowding-out only immediately after rewards ended ( $z = -3.03, p = .002$ ), and a modest positive net effect ( $z = +2.52, p = .02$ ) for the entire post-incentive period. These findings are robust to a variety of alternative model specifications.

The results were replicated (Study 2, N=219) after telling participants that both tasks are equally important ( $z = -3.33, p < .01$ ), suggesting that post-reward crowding-out cannot be explained by desirability, signaling, or altruism as alternative explanations, but rather happens due to people's desire to take a 'break' after working on a demanding task. In Study 3 (N=257) we directly examined this characterization of crowding-out behavior by giving participants an explicit non-taxing break after incentives ended and contrasted the results with a more effortful break that have participants additional autonomy by exercising choices. Consistent with the prediction of the effort-balancing account, providing a break eliminated momentary crowding-out when choices resumed ( $z = -1.04, p = .29$ ), but inconsistent with an autonomy-undermining account of external rewards, providing a choice-break did not arrest crowding-out behavior ( $z = -2.1, p = .04$ ) and the interaction was significant ( $p = .046$ ).

In Study 4 (N=235) we varied incentive size. Higher incentives resulted in more attempts during the incentive period than low incentives (89% vs 70%). However, while there was significant momentary crowding-out with low incentive ( $z = -2.04, p = .04$ ), there was a net post-reward crowding-in with high incentives ( $z = +3.42, p < .001$ ). Therefore, paying more not only arrested post-reward crowding-out but resulted in participants voluntarily pursuing the task more in the post-incentive period. These results are inconsistent not only with the existing theories of crowding-out of intrinsic motivation, but also with depletion, variety-seeking, or reference-point accounts.

In Study 5 (N=340), we varied which task (math vs. videos) was incentivized. Incentivizing a less-effortful and a purely intrinsically motivating task like watching videos provided as useful test of theories. Momentary crowding-out was replicated after incentivizing the effortful math task, but we predicted and found that since there was not much effort to balance, there was no momentary crowding out after incentivizing the leisure task (interaction,  $p < .001$ ).

Although, we characterize post-reward crowding-out as momentary, the temporary decrease in motivation can have longer-term consequences if future decisions are made and locked-in at the point when the motivation is low immediately after exerting effort. In Study 6 (N=189), compared to the no-reward control condition, a significantly higher proportion of participants chose to watch all videos in the last round of the experiment immediately after the reward round was over (58% vs 40%,  $p = .06$ ), however the difference in these locked-in choices became non-significant after participants were given a small break after the reward period (37% vs 40%, *ns*). The results suggest that marketers should be advised to carefully time their renewal solicitations after the withdrawal of temporary marketing promotions that induced higher effort during the reward period.

Our results suggest that post-reward crowding-out behavior is more consistent with an effort-balancing interpretation rather than prior accounts that predicted a reduction in perceived autonomy or change in inferences about preferences on account of using rewards. The momentary nature of post-reward crowding-out behavior, as predicted by the effort-balancing account and found in the studies, helps explain inconsistent findings in the prior literature and challenges the widespread reluctance among policy-makers to use temporary incentives (Kohn, 1999) to influence important behavior change. We discuss the implications off our findings for consumer promotions (eg., discounts) as well as for loyalty programs.

For more information contact: oleg.urminsky@chicagobooth.edu

### ***Opportunity Cost Neglect Attenuates the Effect of Choices on Preferences***

Adam Eric Greenberg, University of California San Diego, USA\*

Stephen Spiller, University of California Los Angeles, USA

We provide evidence from three experiments that representing choices as “whether or not” rather than “which one” attenuates or eliminates the effect of choices on preferences.

Post-choice preferences shift to favor chosen alternatives (Ariely & Norton, 2008; Bem, 1967; Brehm, 1956; Sharot, Velasquez, & Dolan, 2010). This effect of choices on preferences depends on how choices are construed. The same behaviors affect preferences only when they feel like choices (Linder, Cooper, & Jones, 1967; Sharot, et al., 2010), so formally equivalent choice frames can have different effects. People are more sensitive to a feature’s presence than its absence (Newman, Wolff, & Hearst, 1980), so choosing one alternative changes the evaluation of that alternative more than failing to reject a complementary alternative does (Allison & Messick, 1988; Cioffi & Garner, 1996; Fazio, Sherman, & Herr, 1982).

All choices involve forgone alternatives. The value of the best foregone alternative is the opportunity cost of the chosen alternative. Although normative models of decision-making suggest that people should consider opportunity costs every time they make a choice, they often fail to do so (Frederick, Novemsky, Wang, Dhar, & Nowlis, 2009; Jones, Frisch, Yurak, & Kim, 1998; Legrenzi, Girotto, & Johnson-Laird, 1993; Magen, Dweck, & Gross, 2008; Northcraft & Neale, 1986). When people neglect opportunity costs, they do not recognize the choice as one between multiple options. Making opportunity costs salient transforms choices from “whether or not” to “which one.”

Because people often neglect their opportunity costs when choosing and choices only affect preferences when the choices are perceived to be choices, we propose that when people consider opportunity costs, choosing causes their evaluations to shift to favor the chosen option; but when people neglect opportunity costs, this shift is eliminated. Although many choices are “whether or not” decisions, research on the effect of choices on preferences has primarily focused on “which one” decisions.

In three experiments (Ns = 101, 400, and 1007), participants made 11 pre-choice evaluations, 10 (hypothetical) choices, and 11 post-choice evaluations. In the choice phase, participants chose whether or not to spend airline miles on 10 independent offers (e.g., “2 nights in a luxury hotel”). If participants did not spend their miles on a given offer, they would receive a \$100 Visa gift card (the opportunity cost). Before and after making their choices, participants evaluated all 11 items, including the gift card.

Participants were randomly assigned to make choices with or without salient opportunity costs. Experiment 1 used a two-group design with opportunity costs either salient at both choice and post-choice evaluations or not salient at both choice and post-choice evaluations.

Experiment 2 used a 2x2 design in which salience at choice and salience at post-choice evaluation were manipulated independently. Experiment 3 eliminated reminders at post-choice evaluation and introduced a second set of conditions to test whether the results were due to revealing preferences rather than shaping preferences.

Choices without salient opportunity costs were between accepting a focal option (e.g., “Spend my miles on...”) and rejecting that focal option (e.g., “Do not spend my miles on...”), leaving the opportunity cost implied. Choices with salient opportunity costs were between accepting a focal option and rejecting that focal option in favor of the opportunity cost (e.g., “Do not spend my miles on... and take the \$100 Visa gift card instead.”).

We analyzed the post-choice evaluation spread (the difference between the average post-choice evaluation of focal options and the post-choice evaluation of the opportunity cost) as a function of condition, proportion of focal options chosen, and their interaction, controlling for pre-choice evaluation spread. In both Experiments 1 and 2, the post-choice evaluation spread increased with the proportion of focal options chosen when opportunity costs were salient ( $p < .01$ ), but not when they were not salient ( $p > .14$ ; interaction  $p < .025$ ). In Experiment 2, whether opportunity costs were salient at the time of post-choice evaluations made no difference ( $p > .3$ ). Experiment 3 ruled out the alternative explanation that the results are due to revealed preferences by testing the effect when choices follow evaluations, in which case choices may reveal but not affect preferences. The effect only persisted when choices preceded evaluations.

Whether a decision is construed as “whether or not” or “which one” affects whether individuals exhibit post-choice spreading of evaluations. Other factors that affect opportunity cost consideration should similarly moderate the effect of choices on preferences. Resource constraints and memory cues can each prompt opportunity cost consideration (Spiller, 2011). The current findings suggest they will also cause greater effects on preferences. Searching the environment for new options can lead to a preference for discovered options, given the effort involved in search (Ge, Brigden, & Häubl, 2015). If people successfully engage in effortful search of their memory for opportunity costs, similarly enhanced preferences may result.

Although many choices are made in the absence of salient opportunity costs, the effect of such salience on choice-induced preferences has received scant attention in the literature. We show that when opportunity costs are less salient, the effect of choices on preferences is attenuated.

For more information contact: [adam.e.greenberg@gmail.com](mailto:adam.e.greenberg@gmail.com)

***To Partition or Not to Partition: Effect of Partitioning Prices on Consumer Evaluations of Purchases Involving Trade-Ins***

Tom Kim, University of Maryland, USA\*

Joydeep Srivastava, University of Maryland, USA

Imagine that a consumer is considering upgrading cell phone to Samsung Galaxy S6. One retailer is running a promotion “We offer \$150 for trade-in of your cell phone with purchase of Samsung Galaxy S6 at \$199.” Another retailer is running a promotion “We offer Samsung Galaxy S6 at \$49 when you trade in your cell phone.” Which of the promotions will the consumer prefer? This research investigates preference between two price presentations, one which shows both trade-in value and the price of a new product (partitioned price) and the other which only shows net-payment after trade-in (consolidated price). This research also investigates whether the preference differs when trade-in value is relatively low (e.g., \$30) versus high (e.g., \$150) compared to the price of a new product (e.g., \$199).



Based on prospect theory (Kahneman and Tversky 1979), Kim and colleagues (2011) showed that when trade-in value is relatively low, consumers are more sensitive to trade-in value (small gain) than the price of a new product (large loss), whereas when trade-in value is high, they are more sensitive to the price of a new product (large loss) than trade-in value (large gain). According to the model, consumers would prefer a partitioned price over a consolidated price when ratio of trade-in value to the price of a new product is low (e.g.,  $v(-199) + v(30) > v(-169)$ ), but would prefer a consolidated price over a partitioned price when the ratio is high (e.g.,  $v(-199) + v(150) < v(-49)$ ).

However, the preference might be opposite to the above anticipation due to the self-threat/affirmation (Chatterjee, Irmak, and Rose 2013) one perceives from transactions. When ratio of trade-in value to the price of a new product is low (\$30/\$199), consumers may believe that their possession is undervalued due to the large gap with the price of a new product. Thus they feel self-threat from undervaluation of own possessions, which regarded as part of self (Belk 1988), and do not want to deal with the low trade-in value, leading to preference of a consolidated price. In contrast, when the ratio is high (\$150/\$199), consumers may believe that their possession is overvalued due to the similarity with the price of a new product, and feel self-affirmation from observing the high trade-in value, leading to preference of a partitioned price. This research investigates which of the anticipations fits with consumers' preference.

In study 1, participants read a car purchase scenario with trade-in. Participants received offers from two separate dealers and indicated their preference and choice between the two dealers. One dealer showed both trade-in value and price of the new car, whereas the other dealer only showed net-payment after trade-in. In low ratio condition, trade-in value was relatively low compared to price of a new car (\$2,500/\$17,000). In high ratio condition, trade-in value was relatively high compared to price of a new car (\$15,500/\$17,000). The preference towards the consolidated price was higher when the ratio was low than when the ratio was high ( $M = 5.46$  vs.  $M = 4.52$ ,  $p < .05$ ). 64.6% of the participants chose the consolidated price when the ratio was low, whereas only 39.6% chose the consolidated price when the ratio was high ( $\chi^2(1) = 6.01$ ,  $p < .05$ ). As self-threat/affirmation suggested, when trade-in value was relatively low (high), participants did not (did) want to observe the low (high) trade-in value, thus preferred consolidated (partitioned) price.

Study 2 examines role of self-threat/affirmation by measuring self-esteem one perceives from transaction. Participants read a textbook purchase scenario with trade-in, and received an offer under a partitioned price or under a consolidated price. Participants then indicated evaluation of the offer and perceived self-esteem from the offer (e.g., "The offer from the bookstore makes me feel good about myself"). A 2 (low vs. high) x 2 (partitioned vs. consolidated price) ANOVA on evaluation revealed a significant interaction ( $F(1, 155) = 5.69$ ,  $p < .05$ ). When the ratio was high, evaluations of the partitioned price were higher than the consolidated price ( $M_{\text{Partitioned}} = 8.00$  vs.  $M_{\text{Consolidated}} = 7.28$ ,  $p < .1$ ). When the ratio was low, evaluations of the consolidated price were higher than the partitioned price ( $M_{\text{Partitioned}} = 5.33$  vs.  $M_{\text{Consolidated}} = 6.07$ ,  $p < .1$ ). The perceived self-esteem mediated the relationship between price presentation style and evaluation ( $CI_{\text{high}} = [.07, 1.06]$ ,  $CI_{\text{low}} = [-1.37, -.23]$ ).

In study 3, participants' self-esteem was externally manipulated before conducting a trade-in task similar to study 1. After conducting a task that threatens self-view, relative preference toward consolidated price was higher in low ratio than in high ratio condition ( $M_{\text{low}} = 5.95$ ,  $M_{\text{high}} = 3.63$ ,  $p < .01$ ), replicating study 1. Whereas, after conducting a task that affirms positive self-view, the ratio did influence the preference ( $M_{\text{low}} = 5.25$ ,  $M_{\text{high}} = 4.94$ ,  $p > .1$ ). Preference of a consolidated (partitioned) price in low (high) ratio condition was (was not) observed when participants received external self-threat (self-affirmation), which increased (reduced) motivation to utilize the following trade-in transaction to recover positive self-view.

In study 4, participants conducted a trade-in task similar to study 2, with additional information regarding typical trade-in value. In one condition, trade-in offer from a store was lower than typical trade-in value. In the other condition, trade-in offer was higher than typical trade-in value. A 2 (ratio) x 2 (price presentation style) x 2 (trade-in offer) ANOVA with evaluation of the offer as a dependent variable

revealed a significant three-way interaction ( $F(1, 294) = 4.69, p < .05$ ). The two-way interaction of ratio and price presentation style was significant when trade-in offer was lower than typical trade-in value ( $F(1, 294) = 13.77, p < .01$ ), but not when the trade-in offer was higher than typical trade-in value ( $F(1, 294) = .31, p > .53$ ). The pattern of study 2 was (was not) replicated when trade-in offer for self-related possession was lower (higher) than typical trade-in value, which induced self-threat (self-affirmation) and increased (reduced) motivation to recover positive self-view.

For more information contact: tomkim@rhsmith.umd.edu

## ***Individual Papers: Evaluations and Attitudes***

### ***The Action Hero: Mating Motive Mitigates Omission Bias***

Yang He, University of Georgia, USA\*

Marcus Cunha, University of Georgia, USA

Individuals have the inflated preference for options that do not require action (i.e. default option), a phenomenon known as the “omission bias” (Spranca, Minsk, and Baron 1991; Anderson 2003). An example of the omission bias is the vaccination experiment (Ritov and Baron 1995). Suppose children are exposed to a fatal flu while an inexpensive vaccine is available to the public to prevent the flu but the vaccine itself carries a rare chance of fatality. In anticipation of knowing the outcome of deaths, most participants would choose not taking the vaccine (omission). Literature generally agrees that omission bias is linked to the aversion to anticipated regret (Zeelenberg et al. 2002; Anderson 2003). Individuals regret unfortunate outcomes that result from actions more than identical outcomes resulting from omission. Compared to maintaining the status quo, actions require more justification which signals an individual’s responsibility for the outcome. As a result, in the case of an unfavorable outcome, the individual is more likely to experience self-blame (Spranca et al. 1991; Zeelenberg et al. 2002; Baron and Ritov 2004; Zeelenberg and Pieters 2007).

We propose and demonstrate that a romantic motive mitigates and, in some cases, reverses the omission bias. Evolutionary psychology suggests that humans under the influence of romantic motives employ strategies to stand out from the competition among members of the same sex as a way to attract the ideal partner. An effective way to increase the visibility of an individual relative to his/her rivals is to differentiate oneself by engaging in nonconforming behavior (Griskevicius et al. 2006). Because most people usually favor omissions under normal conditions, taking action provides the benefit of visibility from the mating competition.

In Experiment 1, we show that an individual with a romantic motive was likely to take actions deviating from the default setting. The experiment used a 2 (motivation: control vs. romantic)  $\times$  3 (default option: hit vs. stay vs. control) between-subject design ( $N=213$ ). The motivation conditions were manipulated by asking the participants to imagine to be either on a date with an attractive partner or on a vacation without specified companions (Griskevicius et al. 2006, 2007; Li et al. 2012). Participants then played a series of simplified Blackjack games, where they decided to “stay” or “hit” on a pair of cards in order to obtain the final score as high as possible without a “bust” (exceeding 21 points). Ten pairs of cards, each of which added up to 14, 15 or 16 points, constituted the main decision task, given that even the most skilled Blackjack players face a dilemma to either hit or stay in those situations (Galinsky et al. 2003; Baker and Maner 2008). A third of the participants saw “hit” (a second third saw “stay”) pre-populated in the input box as the default action for each hand. To take the default option, participants simply had to press the “Enter” key on the keyboard and the system proceeded to the next hand of cards. To take an action, they had to erase the pre-populated default text and type in the word “stay” (“hit”). The last third of participants were not given any default action prompt, but indicated their “hit” or “stay” decisions using the conventional point-and-click choice format. Comparing the number of “hit” decisions taken by participants using an ANOVA, we observed a significant interaction

between the motivation conditions and the default option given during the card games ( $F(2,201) = 18.69, p < .01$ ). Participants in the hit-as-default condition were more likely to take action and choose “stay” when they were primed with the dating scenario as compared to their counterparts in the control condition ( $M_s = 7.90$  vs.  $3.93$ ;  $F(1,201) = 30.74, p < .01$ ). The opposite was observed for participants in the stay-as-default condition ( $M_s = 4.24$  vs.  $6.39$ ;  $F(1,201) = 9.26, p < .01$ ). However, no statistically significant difference was observed across the motive priming conditions for the no-default (i.e., free-to-choose) condition ( $M_s = 7.32$  vs.  $5.91$ ; n.s.). These results are interesting because instead of simply inflating one’s preference for the risky option (“hit”) as one might have assumed, the manipulation of a romantic motive led the participants to choose the option that was the opposite of the default option. Notice that there were no changes in preference when a default condition was not assigned.

Experiment 2 ( $N=187$ ) tested anticipated regret as a mediator between the mating motive and mitigation of omission bias. As seen above, under normal conditions people anticipate higher regret from potential harms caused by their own actions. However, with activated romantic motives, humans tend to be insulated from the pain of losses but instead regret over missed opportunities (Li et al. 2012). This shift in anticipated regret, in turn, facilitates the mitigation of omission bias. In experiment 2, in anticipation of underperformance in their financial investments, participants in the romantic-motive (vs. control) condition expressed greater regret if the portfolio composition was maintained stable/unchanged (vs. actively managed). This difference in causes of anticipated regret, in turn, made the participants with a romantic motive more likely to take action by adjusting the pre-existing investment portfolio (pab path  $< .05$ ).

In consumer settings, the romantic motive could drive a consumer to make purchase upgrades from the baseline product offering since upgrades resemble an opportunity to act rather than staying with the default option. Results from experiment 3, which used sales scenarios of cars (baseline model vs. premium model) and dinner menus (2-course vs. 3-course) confirmed that a romantic motive induced the choice of premium offerings only when coupled with the upselling tactic ( $p = .77$  vs.  $.58$ ;  $\chi^2(1) = 5.26, p < .05$ ). In contrast, this effect was not observed when the baseline and premium offerings were presented simultaneously. This interaction ( $\chi^2(1) = 8.17, p < .01$ ) suggests that the activation of a romantic motive through advertising may lead to an action-against-default process rather than a risk-seeking or impression management motive.

Overall, we show that when with a romantic motive, individuals are insulated from anticipated regret and favor heightened visibility from the population. As a result, the romantic motive mitigates the well-documented omission bias, an effect that is different from the risk-seeking behavior as previously speculated.

For more information contact: [hjang86@uga.edu](mailto:hjang86@uga.edu)

### ***How Contagion Affects Self-Concept, Product Evaluation, and Consumer Performance***

Tae Woo Kim, Indiana University, USA\*

Adam Duhachek, Indiana University, USA

Kelly Herd, Indiana University, USA

The ‘law of contagion’ refers to the irrational belief that immaterial properties of a contagion source can be transferred to the contagion recipient through physical contact (Nemeroff and Rozin 1994; Rozin, Millman, and Nemeoff 1986). Although negative contagion was argued to be dominant (Nemeroff and Rozin 1994), more recent consumer studies have documented specific cases of positive contagion. For example, research has shown that a product that was contacted by a positive contagion source such as an attractive woman was evaluated more favorably by men, as well as products touched by well-liked celebrities (Argo, Dahl, and Morales 2008; Newman, Diesendruck, and Bloom 2011). Such contagion is regarded an automatic, largely non-conscious process and it was shown that

contagion tend to emerge among the people who chronically employ an experiential processing style that is typified by heuristics (Kramer and Block 2014; Morales and Fitzsimons 2007). Importantly, prior research in self-concept has shown that this nature of contagion is congenial with the mindset that is fostered by the pursuit of ideal self.

According to prior research in self-concept (Markus and Nurius 1986; Sirgy 1982; Wylie 1979), one's ideal self refers to the hopes and goals related to self that individuals aspire to achieve in the future. Many other self-concepts may be relevant but one's ideal self is particularly important because it has been shown to be a strong motivator of behaviors and attitudes among consumers (Landon Jr. 1974; Richins 1991; Sirgy 1982). Prior research has shown that priming the ideal self taps into a promotion regulatory system that is represented by the impulse to approach a desired state (vs. avoiding an undesirable state) (Higgins 1998; Higgins et al. 1994). Importantly, the activation of a promotion regulatory focus has been shown to elicit a less effortful and calculative heuristic processing style (Friedman and Förster 2000, 2001; Pham and Avnet 2004, 2009). Ideal self appears to elicit heuristic processing style due to its nature characterized by eagerness to maximize gains at the risk of errors of commission (Crowe and Higgins 1997).

Therefore, we propose that ideal self activation will make individuals more sensitive to contagion. Also, we predict that a contagion object that was previously touched by another successful individual will not only be evaluated more favorably but also lead to a higher motivation and better performance in a task that promotes achievement of ideal self. Additionally, previous research has argued that transfer of other's essence can change self-concept (Nemeroff and Rozin 1994). Thus, we hypothesize that contagion from a successful person will result in more positive perceptions of the self, which we theorize as the underlying mechanism driving more positive product evaluation and better performance.

**H1:** Activating an ideal-self (vs. control) will make individuals more sensitive to contagion.

**H2:** When an ideal-self is activated, using a product that was previously used by a positive contagion source (vs. not) will lead to higher motivation and better performance in a task that promotes an ideal-self.

**H3:** The positive effect of contagion on product evaluation (i.e., H2a) will be mediated by change in self-concept, a process in which the perceived distance between actual and ideal self decreases as a result of contagion.

In order to test our hypotheses, we conducted 4 studies. The Study 1 examines whether priming ideal-self makes people more sensitive to contagion. Using 4-item contagion sensitivity scale (Newman et al. 2011), we show that priming of ideal self makes people more sensitive to contagion ( $M_{contagion} = 6.54$ ,  $M_{control} = 5.86$ ;  $F(1, 57) = 5.47$ ,  $p = .023$ ). In Study 2, we employ a moderation approach and examine whether contagion emerges and influences product evaluation when ideal self is primed. We prime ideal self related to career and show that consumers who pursue ideal self in career domain evaluate a product (iPad) previously used by other domain relevant successful consumer more favorably ( $M_{success} = 5.06$ ,  $M_{non-success} = 4.72$ ;  $F(2, 203) = 3.22$ ,  $p = .042$ ). Additionally, this effect of previous user on product evaluation was attenuated when ideal self was not primed ( $F < 1$ ). Study 3 examines the behavioral consequences of contagion. Specifically, we prime ideal self in career domain and show that using a pen that was previously touched by a successful career holder (vs. control) lead people to spend more time ( $F(1, 105) = 4.08$ ,  $p = .046$ ) and perform better in a writing task that promotes ideal self ( $F(1, 105) = 6.79$ ,  $p = .01$ ). Finally, Study 4 examines the hypothesized underlying mechanism that contagion will result in a change of self-concept into a positive direction, which in turn, leads to a favorable product evaluation. In doing so, we prime ideal self in career and show that touching a pen that was previously touched by other domain-relevant successful (vs. non-successful) person lead people to believe that they are closer to their desired ideal self ( $F(1, 103) = 4.32$ ,  $p = .04$ ), which in turn lead to a favorable evaluation of the pen (mediation analysis indirect CI:  $-.60$  to  $-.0038$ ). These four studies support our hypotheses. Across the four studies, we also exclude a variety of alternative explanations, such as, mood, judgment of the objective quality of the product, or perception about the previous user of the product.

To summarize, the present work advances the understanding of contagion phenomenon by showing that contagion can be elicited when consumers pursue a desirable state such as ideal-self. This research demonstrates that contagion that is elicited by ideal-self pursuit has an impact not only on product evaluation but also on consumer motivation and performance. Moreover, the present work is designed to be the first to examine how contagion actually enhances self-concept and how it explains the underlying process. The present research examine how ideal-self pursuit and contagion influence each other, and therefore intended to make contributions to the literature on ideal-self and contagion, and its implication extends to broader magical thinking.

For more information contact: kim805@indiana.edu

***Celebrities are not all the same: The influence of self-esteem on attitudes towards advertising with celebrities***

Antonio Benedito Oliveira Jr., Centro Universitario da FEI\*

José Mauro Hernandez, Centro Universitario da FEI

The fascination with celebrities, well-known people who attract major media attention (Jin & Phua, 2014) is an integral part of our society (Derrick, Gabriel, & Tuppin, 2008). The impact of celebrity endorsement can be of great value in a highly competitive environment (Choi & Rifon, 2012).

The influence of self-esteem on advertising with celebrities has not been extensively examined before in the consumer psychology literature. There are exceptions such as Derrick, Gabriel and Tuppin (2008) who drew on parasocial interaction to suggest that people with Low Self-Esteem (LSE) have a more positive Attitude Towards Advertising with Celebrities (ATAC) than those with High Self-Esteem (HSE). However, Aydinoglu and Cian (2014) showed that almost the opposite was true - that is, advertisements portraying only products was more advantageous than portraying attractive models for low appearance self-esteem individuals. The mixed results of previous studies might be due to the fact that they did not take into account certain celebrities' characteristics. In this study, it is argued that not all celebrities are the same and that they might be perceived differently depending on the level of the viewer's self-esteem.

When viewers perceive that a celebrity endorser possesses an image close to their ideal self-image, they are likely to rate the ad more favorably (Choi & Rifon, 2012). According to the identification theory, identification with individuals or groups helps people to improve the self-concept to seek a positive distinction (Jin & Phua, 2014). Derrick, Gabriel and Tippin (2008) showed that writing about a favorite celebrity as an affirmation of himself improves feelings about the self, which reduces discrepancies for LSE. On the other side, Sobol and Darke (2014) indicated that exposure to advertising with "ideal" models increases the discrepancy to the self.

By drawing on the celebrity/consumer congruence and identification theory, we hypothesize that LSEs will rate advertisements more highly when they portray celebrities that are more similar to themselves ("proximal celebrities") while HSEs will prefer advertisements that portray celebrities that are more similar to their idealized self ("distal celebrities"). Proximal celebrities (e.g. Oprah Winfrey) are more down-to-earth, realistic, pragmatic people. They are regarded as potential friends and the viewers tend to believe that they live an ordinary life like themselves. Distal celebrities (e.g. Angelina Jolie), in contrast, are glamorous, idealized, admired, and highly regarded people. They live the "perfect life" and are always portrayed in the media in glamorous settings. It can thus be argued that LSEs will be more attracted by advertisements that portray proximal celebrities while HSEs will prefer advertisements that show distal celebrities.

Experiment One tests the hypothesis above by varying the type of celebrity (proximal vs. distal) and measuring the viewer's self-esteem. In a pre-test, the participants (n=130) were shown four images of celebrities couples and asked to assess them on seven dimensions

(closeness to real life, involvement with the celebrity, identification, similarity of appearance, popularity, awareness, and assimilation/contrast). On the basis of this pre-test, Gisele Bündchen (a top Brazilian model) and her husband, Tom Brady (an American football player) were chosen as the distal celebrities, while Fernanda Lima (Brazilian television presenter and model) and her husband, Rodrigo Hilbert (Brazilian actor and model) were chosen as the proximal celebrities.

The participants ( $n=118$ ; 53% males) completed the 6-item of the “Appearance” subscale of the State Self-Esteem Scale (SSES - Heatherton & Polivy, 1991). Following this, each participant was randomly assigned to assess one of two advertisements of a new clothing brand which portrayed a celebrity (distal vs. proximal). Finally, the participants completed the ATAC (Mitchell & Olson, 1981). A bootstrap moderation mediation analysis confirmed our predictions that the degree of self-esteem of the participants moderated the ATAC, i.e. LSEs rated the advertisement with proximal celebrities more highly (Effect:  $-.5864$ ,  $p<.02$ ) while HSEs preferred the advertisement that portrayed distal celebrities (Effect:  $0.5271$ ,  $p<.03$ ). This result is new to the literature and shows that the influence of self-esteem on ATAC depends on the type of celebrity involved.

In Experiment Two we investigate whether LSEs would rate an advertisement more highly that portrays a proximal celebrity (Fernanda Lima & Rodrigo Hilbert) than an advertisement that only displays products. Participants ( $n=101$ ; 59% females) were randomly assigned to one of two self-esteem conditions (Griskevicius & Shiota, 2010). Firstly, the participants read a short story of about 500 words to evoke feelings (positive for the HSE condition and negative for the LSE condition). Next, they were asked to write a story based on an experience on their private lives, increasing or decreasing their self-esteem. The participants then completed the 20 items of SSES (Eagly, 1967). Each participant then saw one of the two advertisements and completed the ATAC.

An ANOVA 2 (self-esteem: low versus high)  $\times$  2 (advertisement: proximal celebrity versus product) on the ATAC revealed a self-esteem main effect ( $F(1,97)=2.8$ ,  $p<.10$ ), an advertisement main-effect ( $F(1,97)=4.1$ ,  $p<.05$ ) and, more importantly, an interaction effect ( $F(1,97)=11.1$ ,  $p<.01$ ). In line with our predictions, LSEs rated the proximal celebrity advertisement ( $M=3.9$ ) more highly than the advertisement that only displayed products ( $M=2.4$ ;  $t(49)=14.5$ ,  $p<.01$ ). No differences between the advertisements were found for HSEs ( $t(52)=0.9$ ,  $p>.4$ ).

In Experiment Three we investigate whether HSEs would rate an advertisement more highly that portrays a distal celebrity (Angelina Jolie & Brad Pitt) than an advertisement that only displays products. We adapted the same procedures that were adopted in Experiment 2. A bootstrap moderated mediation analysis revealed that, in line with our predictions, the participants ( $n=112$ ; 73% females) revealed that self-esteem moderated the mediation effect of product identification on ATAC (0.1455, CI: .0400 to .3219). This effect only occurred for HSE people ( $M=5.80$ , CI: .0987 to .6177). The results of Experiments 2 and 3 corroborate and support the results of Experiment 1.

This study makes a contribution to the self-esteem and celebrity literature by distinguishing between the ATAC of LSE versus HSE consumers as a characteristic of assimilation/contrast and identification with the celebrities. Additionally, it may provide a strategic vision for marketers while choosing a celebrity endorsement for their products and target audiences.

For more information contact: [abojuniorj@hotmail.com](mailto:abojuniorj@hotmail.com)

## *The Effects of Political Ideology on Attribution and Value Threat*

Claire Heeryung Kim, Indiana University, USA\*

DaHee Han, McGill University, Canada

Adam Duhachek, Indiana University, USA

H. Shanker Krishnan, Indiana University, USA

Previous research proposes that political ideology is associated with differences in cognitive styles, feelings and behavior (Amodio et al. 2007; Jost et al. 2003, 2007; Jost et al. 2009). In particular, research has shown that liberals tend to focus on situational or institutional explanations for things like homelessness (Pellegrini et al. 1997) or why people commit crimes (Carroll et al. 1987), whereas conservatives tend to focus on personal explanations for the same phenomena. Consequently, attitudes toward social welfare and the indigent are consistently correlated with ideologically patterned attributions about the cause of social issues (e.g., Singerman et al. 1976). For instance, liberals generally favor increased spending on social programs, whereas conservatives oppose such spending (e.g., Cozzarelli et al. 2001; Griffin and Oheneba-Sakyi 1993; Kluegel 1990). Despite its prevalent influence on attributions and consequent attitude, scant research has examined the effect of political ideology on post-purchase issues where attributions matter (Laczniak et al. 2001; Valle and Krishnan 1978; Westbrook 1987). To fill this gap, the current research examines how political ideology influences consumer blaming behavior when encountering brand failure. In particular, the current research suggests liberals and conservatives show attributional differences in the context of brand failure. Importantly, this research suggests these attributional differences are contingent on the value importance implicated by the failure.

Thus, we hypothesize that in a neutral brand failure setting, conservatives will draw more dispositional explanations than liberals replicating previous findings (hypothesis 1). However, this pattern will be flipped when liberals' value-harm/care is impaired by the brand failure. Previous research has demonstrated that liberals considered harm/care issue as more relevant to their moral judgments than conservatives (Graham et al. 2009). Therefore, if a certain brand failure makes the victim salient, this will activate liberals' motivation to restore harm and care about the victim. Based on these reasoning, we posit that in such case liberals (vs. conservatives) will be more likely attribute the brand failure to the brand (hypothesis 2). Finally, the effects of conservatism on dispositional attribution will be weakened when conservatives' value, belief in a just world, is threatened. Researchers revealed that conservatives believe that the world is just and fair and thus the current situations or outcomes are what individuals deserve, emphasizing on individual's responsibility (Furnham and Gunter 1984; Lerner and Miller 1978). Thus, if this value is threatened, situational factors (e.g., economic condition, unexpected accident) will become salient to conservatives, thereby resulting in reduced dispositional attribution (hypothesis 3). Across three studies, we demonstrate that conservatives (vs. liberals) are more likely to attribute the failure to a brand-specific factor in a neutral brand failure setting. In addition, we reveal that this effect is moderated by key values associated with conservative and liberal ideologies.

Study 1 examined the main effects of political ideology on attribution. Existing literature has demonstrated that conservatives are more likely to attribute the cause of societal problems such as poverty or crime to individual causes rather than situational causes (e.g., Singerman et al. 1976). Thus, we predict that conservatives (vs. liberals) will be more likely to favor such explanations in the context of brand failure. To test these hypotheses, participants read a scenario about a service failure at a restaurant, imagining that they had poor service at the restaurant (Mattila and Patterson 2004). Next, they indicated to what extent each of attribution items was a cause of the brand failure using four items on seven-point scales. Finally, participants provided demographic information and indicated their political ideology using a single item (Jost et al. 2014). A regression analysis revealed that conservatives (vs. liberals) drew more dispositional attribution ( $\beta=.70$ ,  $SE=.33$ ,  $t=2.11$ ,  $p=.04$ ), supporting hypothesis 1.

Study 2 investigated whether findings from study 1 can be reversed when an important liberal value is threatened. Specifically, the brand failure resulted in destroying the environment, thereby activating liberals' value of harm/care. Participants read a scenario about BP's oil spill that caused harm to the environment. Next, they responded to attribution items to determine the degree to which they blamed the firm or other causes. Finally, participants provided demographic information and indicated their political ideology using the same scale in study 1. A regression analysis revealed that liberals (vs. conservatives) were more likely to attribute the brand failure to the brand ( $\beta = -.39$ ,  $SE = .15$ ,  $t = -2.60$ ,  $p = .01$ ). Thus, study 2 demonstrates that the liberals' tendency toward situational attributions is reversed when the failure implicates a key moral value.

Study 3 demonstrated that the attributional reversal shown in study 2 among conservatives rather than liberals by violating an important conservative value. In particular, we believe that when the value of a just world which emphasizes individual's responsibility (Furnham and Gunter 1984; Lerner and Miller 1978) is violated, conservatives will focus less on dispositional attributions. In study 3, we manipulated belief in a just world (random negativity vs. control). In the random negativity condition, participants read a scenario adapted from previous attribution research (Hafer 2000) where a hard working person was killed in an airplane accident. Next, participants were asked to list their thoughts about the scenario. Whereas in the control condition, participants were instructed to describe what they were doing for extra curriculum activities. Next, all participants followed the procedure identical to that of study 1. A regression analysis with political ideology and belief in a just world as the independent variables and dispositional attribution as the dependent variable revealed marginally significant main effects of political ideology ( $\beta = 1.29$ ,  $SE = .07$ ,  $t = 1.87$ ,  $p = .07$ ) and belief in a just world ( $\beta = 1.29$ ,  $SE = .69$ ,  $t = 1.81$ ,  $p = .07$ ), and a significant interaction ( $\beta = -.24$ ,  $SE = .10$ ,  $t = -2.49$ ,  $p = .02$ ), supporting hypothesis 3.

Overall, our findings contribute to the consumer literature by providing evidence to understand the relationship between political ideology and consumers' attributions in response to brand failure as a function of value importance. Second, the current research is one of the first investigating the effects of ideological differences in fundamental attribution error in the context of brand evaluations. In addition, this research has implications for practitioners by suggesting how they could utilize consumers' political ideology to cope with brand failure.

For more information contact: [heerkim@indiana.edu](mailto:heerkim@indiana.edu)

**JCP AE RESEARCH AND REPORT MEETING**

**4:00 pm - 4:55 pm**

**Blue Heron**

**JCP ERB MEETING**

**5:00 pm - 7:00 pm**

**Tarpon Key**



## Working Paper Session 2

6:00 pm - 7:30 pm

Banyan Breezeway

### **Working Papers: Working Paper Session 2**

***Mine is mine and yours is mine: Understanding the relationship between lay rationalism, psychological ownership and consumers' participation in access-based consumption.***

Antje Graul, Leeds University Business School, United Kingdom\*

Dr. Aristeidis Theotokis, Leeds University Business School, United Kingdom

Participation in access-based consumption may be described as rationalistic economic behavior; however emotional discomfort may arise when accessing a good owned by another party and subsequently harm consumers' participation intention. This research shows that lay rationalism significantly increases participation in peer-to-peer access-based consumption as a user. Decomposing the effect, we suggest and test a mechanism according to which psychological ownership mediates the positive effect of lay rationalism on participation intention: consumers that focus on rationalistic and functional attributes of access as market-mediated transaction may downplay their psychological perception of non-ownership during access and therefore experience less emotional discomfort.

For more information contact: bn13arhg@leeds.ac.uk

***The Inconsistent Effect of Financial Goal-Consistent Behaviors on the Rich and the Poor***

Deepika Agarwal, Arizona State University, USA\*

Adriana Samper, Arizona State University, USA

Raghu Santanam, Arizona State University, USA

Previous research shows that making consumers aware of their goal-consistent behaviors can give them feelings of high goal progress (Campbell and Warren, 2015). In the case of financial well-being, one might expect that providing such interventions could help vulnerable individuals with limited means who may already be engaging in more frugal financial behaviors. However, in the present research, we demonstrate that financial goal-consistency provides a greater sense of goal progress only to high socioeconomic status (SES) individuals, which motivates them to further engage in financially responsible behaviors, whereas no such effect is seen for low SES individuals.

For more information contact: deepika.agarwal@asu.edu

***Puffery in Advertising and Consumers' Hope***

Wonkyong Beth Lee, Western University, Canada\*

Timothy Dewhirst, University of Guelph, Canada

Puffery refers to highly exaggerated advertising claims, but is commonly used successfully as a legal defence given that "reasonable" consumers should not be influenced by puffery when they make consumption decisions.

Despite considerable research on "puffery," a number of gaps remain. Puffery has been applied uniformly in assessing whether or not

marketing communication is deemed deceptive, but it is proposed that the persuasive potential of puffery might have particular relevance to certain products where there is a basis for consumers to be more “hopeful” about the potential efficacy of the “puffed” claims. This study is to examine the influence of persuasion knowledge (i.e., consumers’ beliefs about marketing tactics) on consumers’ evaluations of puffery: to explore whether consumers’ motivated reasoning (i.e., hope) plays a role in explaining why consumers may rely on puffed claims when making purchase decisions.

For more information contact: [wkbeth@gmail.com](mailto:wkbeth@gmail.com)

***Social Product Customization: Peer Input, Conformity, and Consumers’ Evaluation of Customized Products***

Tobias Schlager, University of St. Gallen, Switzerland\*

Andreas Herrmann, University of St. Gallen, Switzerland

Christian Hildbrand, University of St. Gallen, Switzerland

Nikolaus Franke, University of Vienna

Gerald Häubl, University of Alberta, Canada

Five studies show that public relative to private peer input causes more extensive modifications of initial product configurations. This effect is stronger when consumers think more holistically (either habitual or induced externally) while those modifications generate positive product evaluations when consumers feel close to their peers but backfire when they feel distant.

For more information contact: [tobebryant@me.com](mailto:tobebryant@me.com)

***Exploring the Effects of Visual Cues on Persuasion***

Ning Ye, Temple University, USA\*

Maureen Morrin, Temple University, USA

Angelika Dimoka, Temple University, USA

Our research aims to explore whether consumers’ perceptions of product efficacy are biased by product format: when the ingredients are presented as a whole versus in a partitioned format. Across three studies, we show that a nutritional product presented in a partitioned format (i.e., with several different ingredients) versus one presented as a whole will be perceived to be more (vs. less) effective among highly health-motivated people, but not among low health-motivated people.

For more information contact: [ning.ye@temple.edu](mailto:ning.ye@temple.edu)

***Can the variation of the size of plates, bowls and serving spoons be utilized to boost healthy eating? A field experiment in the salad bar***

Sunghwan Yi, University of Guelph, Canada\*

Vinay Kanetkar, University of Guelph, Canada

Hai Tran, University of Guelph, Canada

Although behavioral principles of nudge and choice architecture have recently been applied to food consumption context, the focus has been almost exclusively on reducing the consumption of unhealthy hedonic food. In the present paper, we applied the nudge principle to the serve-serving of healthy food. We assessed the possibility that the amount of salad bar items self-served may be increased by

varying the size of plates and serving spoons at the university salad bar. An exploratory field study conducted in cooperation with the university hospitality services revealed a pattern that is directionally consistent with the hypothesis.

For more information contact: syi@uoguelph.ca

***Exploring the Influence of Trait and State Nostalgia on Attitudes toward High and Low Heritage Brands***

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

John Murry, University of Iowa, USA

This research demonstrates that both state and trait nostalgia have a stronger positive effects on consumers' brand attitudes when they perceive that brands have a strong heritage and state nostalgia is more powerful when trait nostalgia is low. State nostalgia seems particularly appropriate enhancing communications tactics while trait nostalgia can facilitate targeting strategies. Future research will examine the underlying psychological processes through which state and trait nostalgia combine to influence on brand identities, attitudes, and purchase behaviors.

For more information contact: youngkyu-kim@uiowa.edu

***Three tales of emotional understanding and gift giving.***

Rajani Ganesh Pillai, North Dakota State University, USA\*

Sukumarakurup KrishnaKumar, North Dakota State University, USA

Gift giving is a process involving emotions. Higher ability to understand such emotions, the emotional understanding (EU) facet of emotional intelligence (EI), therefore, should play an important facilitative role in the amount of giving and the long-term consequences that follow. In this paper, we elucidate this relationship through three studies. First, we show that consumers with high EI-U spend more on gifts for others. Further, the effect of EI-U on gift spending is stronger for closer individuals than for less closer individuals. Finally, gift spending has an influence on life satisfaction especially for individuals with high EI-U.

For more information contact: rajani.pillai@ndsu.edu

***Power, Legitimacy and Conformity Influence Intention to Purchase Organic Products***

Clarissa Cappelletti, Cass Business School, London, United Kingdom

Rhiannon MacDonnell, Cass Business School, London, United Kingdom\*

This paper examines the effect of power on purchase intentions and willingness to pay for organic products that are positioned as benefitting one's self vs. others. In Study 1, we find that powerful people intend to buy products benefitting others whereas powerless people prefer focusing on themselves. In Study 2, we introduce a norm (pro organic vs. against organic) to see if conformity plays a role

in the effect of power and positioning on WTP. In the pro organic norm data, legitimately powerful people have a lower intention for products benefitting themselves compared to consumers in the illegitimate condition.

For more information contact: r.macdonnell@city.ac.uk

***Tell Me What You Wish: How Pre-Configurations Based On Preference Articulation Affect Consumer Product Configuration Processes***

Daniel Boller, University of St. Gallen, Switzerland\*

Tobias Schlager, University of St. Gallen, Switzerland

Andreas Herrmann, University of St. Gallen, Switzerland

This paper examines how preference articulation prior a configuration task and receiving an initial configuration based on this preference articulation affects both consumers' evaluation of the configuration process and the final product configuration. A combination of four experiments demonstrates that the preference articulation entry increases consumers' choice confidence and consumers' purchase intention. This process is driven by the extent to which consumers identify with the product configuration and a decreased choice complexity during the configuration process. The proposed research offers novel insights into product customization. Note: The first author (Daniel Boller) is a PhD student and will present the working paper.

For more information contact: daniel.boller@unisg.ch

***I Can Do Nothing, Therefore I Hope: The Cultural Differences in Belief In Fate, Hope, and Perceived Ad Credibility***

Samer Sarofim, School of Business, University of Kansas, USA\*

Aimee Drolet Rossi, UCLA Anderson School of Management, USA

This research hypothesized and provided evidence that collectivistic eastern societies (Indians) perceive ads as more credible than individualistic western societies (Americans), with hope mediating the relationship between culture and perceived ad credibility. Indians adopt a stronger belief in fate than Americans. Consequently, belief in fate mediates the relationship between culture groups and hope for advertised benefits. Taken together, the overall model; culture ? belief in fate ? hope ? perceived ad credibility is tested. Results provided evidence that both belief in malleable fate and hope play a pivotal role in explaining the relationship between culture and perceived ad credibility.

For more information contact: samer.sarofim@gmail.com

***Power does not Always Corrupt: Source of Power Effects on Self-Control***

Yue Liu, University of Central Florida, USA\*

Huifang Mao, University of Central Florida, USA

Xin He, University of Central Florida, USA

This research examines how consumers' self-control behavior can be affected by different sources of power (effort vs. luck). It is found that individuals experiencing a state of power due to their effortful exertion (vs. good luck) possess higher (vs. lower) self-control, whereas those experiencing a state of powerlessness because of inadequate effortful exertion (vs. bad luck) have relatively lower (vs. higher) self-control. We propose that this effect occurs because one's effortful striving for power process can influence their self-control capacity, which in turn affects their self-control behaviors.

For more information contact: Yue.Liu@ucf.edu

***Cube or Sphere? Effects of Self-Construal on Product Evaluation***

Wan Kam Chan, Iowa State University, USA\*

Sekar Raju, Iowa State University, USA

Frank Kardes, University of Cincinnati

This research examines how self-construal (independents versus interdependents) influences shape preference and volume judgment of products in two typical shapes (cube and sphere). Our findings show that independents find cubic shapes more attractive than spherical shapes and are more likely to use heuristics in forming volume judgment. They are more likely to encounter choice conflict when the two product benefits (shape and volume) are considered together. This research has implications for product design, metaphorical reasoning, and perception.

For more information contact: pchan@iastate.edu

***Seeing Products in a Different Light: How Sunshine Affects Consumer Bidding Behavior***

Tobias Schlager, University of St. Gallen, Switzerland\*

Emanuel de Bellis, University of St. Gallen, Switzerland

This paper examines the role of sunshine, a ubiquitous environmental factor, in an auction bidding context. Based on a combination of large-scale field data and online experiments, we demonstrate that exposure to sunshine (vs. no sunshine) causes consumers to bid a larger amount on outdoor (but not on indoor) products. This effect is driven by consumers' mental simulation of product usage, which elicits a quasi-endowment effect and ultimately increases consumer bidding prices.

For more information contact: tobebryant@me.com

***Rejecting a Job Applicant May Drive Away a Potential Consumer: The Interaction Effects of Types of Organization Brand Rejection and Self Esteem***

Jun Yan, University of Manitoba, Canada\*

Fang Wan, University of Manitoba, Canada\*

Nicolas Roulin, University of Manitoba, Canada

This paper examines the interaction effect of the organizational rejection and applicants' self-esteem on their product wanting as consumers. We found that high (vs. low) self esteem individuals took rejection more negatively when the reason for rejection is person-job fit (vs. person-organization fit) and thus had more negative evaluations of the products from the organization.

For more information contact: wanf@ms.umanitoba.ca

***When is Saying “No” More Powerful than Saying “Yes”? The Interactive Effects of Negation and Modality Match on Forgetting***

Wan Kam Chan, Iowa State University, USA\*

Sekar Raju, Iowa State University, USA

Frank Kardes, University of Cincinnati

This research examines how negations ('no' response) undermine consumer's retrieval of brand attributes from memory and how matched and mismatched modality (presentation and imagery) moderate the effect of negation. The results indicate that forgetting is higher after a negated ("no") response is elicited relative to after an affirmative ("yes") response is elicited. Also, forgetting is weakened in the negated condition when the presentation modality and the imagery modality match with each other relative to do not match. This research has implications for branding and information processing.

For more information contact: pchan@iastate.edu

***Sorting as Screening***

Kurt Munz, PhD Student, New York University, USA\*

Priya Raghubir, New York University, USA

Sorting by a product attribute can diminish the importance weight of that attribute. When choosing is difficult, consumers may treat sorting as screening. Once options are sorted, consumers may form a consideration set comprising the options at the top. Because these options are more homogeneous with respect to the sorted attribute, consumers pay less attention to the sorted attribute in favor of a second attribute. This attentional shift emerges in a subsequent conjoint analysis, with less weight placed on the sorted attribute and more weight on a second attribute.

For more information contact: kurt.munz@stern.nyu.edu

***Do More Interesting Articles Become More Impactful? -An Analysis of Articles In Journal Of Marketing From 1996 To 2013***

Onion Haitong Gong, National University of Singapore, Singapore\*

Since Davis' article "That's Interesting" (1971), scholars hold the belief that articles that create a tension (a stronger form of negation) are more interesting than articles that spot a gap (a weaker form of negation). However, there is no empirical evidence on whether more 'interesting' articles with high degree of negation do become more impactful articles. An analysis of articles in Journal of

from 1996 to 2013 reveals that articles with less negation receive more citations. The surprise findings could possibly be explained by the first-of-its-kind effect, social norms, and the scope of audience.

For more information contact: gghhtt@gmail.com

***Assimilating Consummatory Behaviors & Contrasting Instrumental Behaviors***

Shreyans Goenka, Cornell University, USA\*

Manoj Thomas, Cornell University, USA

Are people more likely to consume a fruit salad when it is compared to a cookie or when it is compared to an apple? More generally, are consumption intentions for a target contrasted from the anchor or assimilated to the anchor? In this research, we propose that it depends on the nature of behavioral intentions. Consummatory behavioral intentions (influenced by spontaneous affective reactions) are assimilated to the anchor, but instrumental behavioral intentions (influenced by deliberative evaluation on criteria such as healthfulness) are contrasted to the anchor. Results from a controlled experiment, and mediation analyses, support this thesis.

For more information contact: sg746@cornell.edu

***The Impact of Large Versus Small Menu Size on Calorie Estimation***

Yong Kyu Lee, York College, The City University of New York, USA

Junghyun Kim, Virginia Tech, USA\*

Paul M. Herr, Virginia Tech, USA

This research examines how consumers use menu information to estimate the caloric content of a food item. We propose that the number of items listed on a menu systematically influences consumers' calorie estimations. Three experiments support our hypothesis that consumers provide a higher calorie estimate for items presented on a menu with a large (vs small) number of options. The current research further investigates the range of calorie estimates as the driver of this menu size effect and discusses the implications for consumer food choices.

For more information contact: jhkim21@vt.edu

***Don't tell Them How Much They Mean to You: The Suppressing Effect of Salience of Customer Value on Business Gift Giving***

Yanfen You, University of Wisconsin - Milwaukee, USA\*

Massimiliano Ostinelli, University of Wisconsin - Milwaukee, USA\*

Through two experiments, we examine the role of making customer value salient in business gift giving. We show that when customer value is not salient, a business gift of small monetary value has a positive impact on customer attitude, in contrast, when customer value is made salient by firms' verbal acknowledgement, the effect of business gift of small monetary value may be diminished or the gift may even backfire.

For more information contact: [yyou@uwm.edu](mailto:yyou@uwm.edu)

***The Influence of Contextual Minority Status on Privately-Held Evaluations of Identity Linked-Products***

Iman Paul, Georgia Tech, USA\*

Jeffrey R Parker, Georgia State University, USA

Sara Loughran Dommer, Georgia Tech, USA

Publically stated attitudes tend to conform to those of others (Asch 1955; Hofmann et al 2005). However, privately held evaluations (i.e., those not revealed to others) regularly deviate from publically-stated evaluations (Festinger 1957; Zimbardo et al. 1965) and should be less sensitive to the social context. Yet, this paper find this is not true. Specifically, we find in two studies that when consumers find themselves to be in the numerical minority of a group on a given identity-relevant dimension (e.g., gender), they tend to hold less positive attitudes toward products corresponding with that dimension of their identity.

For more information contact: [iman.paul@scheller.gatech.edu](mailto:iman.paul@scheller.gatech.edu)

***To Rent or Own? The Impact of Renting on the Expected Speed of Product Mastery***

R. Dustin Harding, Grenoble Ecole de Management, France\*

Diogo Hildebrand, Grenoble Ecole de Management

Jannine D. Lasaleta, Grenoble Ecole de Management

A customer's expectation of how easily or quickly they can master a product is an important factor in determining whether they continue using the product after adoption. Since rental services have grown in popularity consumers frequently encounter the decision of whether to rent or own skill-based products. Results from two experiments indicate that renters, as opposed to owners, expect it will take them less time to master a newly obtained product. These results are shown to be mediated by the renter and owner's perceived relative standing among other renters and owners.

For more information contact: [rex.harding@grenoble-em.com](mailto:rex.harding@grenoble-em.com)

***Flavor Halos and Consumer Perceptions of Food Healthfulness***

Nguyen Pham, Arizona State University, USA\*

Maureen Morrin, Temple University, USA

Melissa Bublitz, University of Wisconsin - Oshkosh, USA

We examine how repeated exposure to health-related products containing specific flavors (cherry-flavored cough syrups) can bias consumer perceptions about the healthfulness of foods that contain those same flavors (cherry-flavored cheesecake). We further show that dieters are more likely to transfer health-related perceptions of flavors to indulgent foods containing those flavors.

For more information contact: [ntpham2@asu.edu](mailto:ntpham2@asu.edu)



### ***The Role of Past Feared-Self in Avoiding Future Feared-Self***

Aditi Bajaj, Georgia Tech, USA\*

Sara Dommer, Georgia Tech, USA

This research examines how the presence of a past ‘feared-self’ (e.g., being overweight in the past) in the same category as a ‘future feared-self’ (e.g., becoming overweight in the future) affects motivation to avoid it. Based on research on psychological distance theory, we predict and demonstrate that the presence of a past feared-self makes the future feared-self feel less psychologically distant. This psychological closeness to the feared self in-turn reduces the amount of perceived control over avoidance of that self and subsequently lowers the motivation to avoid the future feared self.

For more information contact: [aditi.bajaj@scheller.gatech.edu](mailto:aditi.bajaj@scheller.gatech.edu)

### ***It Feels Good and Bad to Be Fake: The Effects of Using Counterfeits on Mixed Emotions***

(Joyce) Jingshi Liu, Hong Kong University of Science and Technology\*

Amy Dalton, Hong Kong University of Science and Technology

Jiewen Hong, Hong Kong University of Science and Technology

Four studies examine how consumers feel while using counterfeit products and how these feelings impact the appeal of counterfeits. While purchasing counterfeits elicits predominantly positive emotions, using counterfeits elicits mixed emotions. Mixed emotions arise when counterfeit users care about the signal they are sending to others — they feel positive about the brand’s signaling value and negative about the risk of social judgment. Accordingly, counterfeit users feel more mixed in public (vs. private), and when their motivation to signal status is high (vs. low). Mixed feelings are aversive; thus, counterfeit usage can reduce willingness-to-pay for that counterfeit and intentions to purchase other counterfeits.

For more information contact: [jliubh@connect.ust.hk](mailto:jliubh@connect.ust.hk)

### ***“Are You Making a Play for Me?” Effects of Gamification on the Formation of Consumer-Brand Relationships***

Axel Berger, University of St. Gallen, Switzerland\*

Andreas Herrmann, University of St. Gallen, Switzerland

Tobias Schlager, University of St. Gallen, Switzerland\*

Consumer-brand relationships substantially contribute toward companies’ financial performance. However, traditional marketing models have successively lost effectiveness to engage consumers in brand interactions, leading to declining returns on marketing investments. Drawing from self-expansion and flow theory we propose gamification to strengthen consumer-brand relationships. Based on a field study and three experiments we find that gamification enhances consumer-brand relationships. This influence is fully mediated by the degree to which consumers perceive emotional brand engagement during gameplay. Furthermore, integrating performance feedback and goal setting into game design fosters emotional brand engagement, but only when perceived game difficulty matches consumers’ capabilities.

For more information contact: [axel.berger@unisg.ch](mailto:axel.berger@unisg.ch)

### ***The Risk of Virtue***

Boyoun (Grace) Chae, Temple University, USA\*

Hyun Young Park, China Europe International Business School, China\*

Katherine White, The University of British Columbia, Canada

While prior research examined the impact of corporate social responsibility (CSR) on consumers' attitude toward the company and its products, no extant research has investigated how CSR affects consumers' risk-taking decisions. The current research explores how CSR influences consumers' financial risk-taking depending on their belief in a just world (BJW).

For more information contact: boyoun.chae@temple.edu

### ***The Unintended Negative Consequences of Sharing Health Risk Information on Social Media***

Frank Zheng, University of Texas at Austin, USA\*

Susan Broniarczyk, University of Texas at Austin, USA

Contrary to the belief of health marketing practitioners that encouraging consumers to share health risk information on social media would promote their awareness of health risks and preventive behavior, we posit that having social media users share health risk messages with their close friends (versus distant friends) can lead to unexpected detrimental consequences to the sharers such as decreased health risk perception. We examined two possible mechanisms: selective forgetting through transactive memory system and anxiety buffering function of close relationship in two experiments.

For more information contact: zjq407@gmail.com

### ***Psychological Distance and Power in Promoting Recycling Behaviors***

Xin Wang, University of Oregon, USA\*

Jiao Zhang, University of Oregon, USA

This paper explores how psychological distance and individual's sense of power influences the effectiveness of message framing in recycling. When distance is far, loss (gain) frames works better with low (high) power. When distance is close, gain frames works better with low power; frames don't matter for high power.

For more information contact: xcw@uoregon.edu

### ***The Paradox of Social TV: The Effects of Connectedness vs. Distraction on Enjoyment***

Cansu Sogut, Boston University, USA\*

Barbara Bickart, Boston University, USA

Frederic Brunel, Boston University, USA

Susan Fournier, Boston University, USA

“Social TV,” the use of social media to communicate with other viewers while watching TV, enables people to virtually share their experiences with close or distant others. In this paper, we examine how simultaneous communication about viewed content affects consumers’ enjoyment of the viewing experience. In two experiments, we find that engaging in simultaneous communication (vs. just watching) increases social connectedness, which enhances the enjoyment of the experience. However, we also find that when communication leads to distraction (e.g., when content is complex), simultaneous communication hinders the enjoyment of the viewed content. We provide a theoretical framework to reconcile the paradoxical results.

For more information contact: [sogut@bu.edu](mailto:sogut@bu.edu)

***The Effect of Product Type on Consumers’ Preference for Ambiguous vs. Precise Ratings***

Amin Attari, University of Kansas, USA\*

Promothesh Chatterjee, University of Kansas, USA

Yexin Jessica Li, University of Kansas, USA

Previous research has demonstrated differences in consumer behavior in response to precise vs. ambiguous information, showing that people are generally ambiguity averse. However, not much research has investigated the effect of ambiguity in product ratings on consumers’ preference for different types of products. We investigate whether, when, and why consumers prefer precise information over ambiguous information. We hypothesize that, when buying a utilitarian product, consumers prefer precise product ratings over ambiguous ones. However, due to the motivation inherent in hedonic purchases, we propose this preference gets attenuated when consumers consider such products.

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

***When Your Hands Are Tied: The Impact of Expense Ownership on Financial Decisions***

Joshua Morris, Stanford University, USA\*

Szu-chi Huang, Stanford University, USA

We explore the impact of perceived expense ownership—the extent to which the incurrence of an expense is perceived to be dictated mostly by one’s own will or external factors—on financial decisions. While prior research has focused on the automaticity of choice (i.e., who makes the decision), our paradigm keeps automaticity constant and only alters the perceived level of choice ownership. We demonstrate that lower ownership makes the expense more justifiable to consumers, thus lowering the pain of payment; consequently, consumers are more likely to select more expensive options (e.g., upgrades) for fulfilling that expense.

For more information contact: [jimorris@stanford.edu](mailto:jimorris@stanford.edu)

***Residential mobility and uniqueness seeking***

Minkyung Koo, University of Illinois at Urbana-Champaign, USA

Andy Ng, University of Illinois at Urbana-Champaign, USA\*

Shigehiro Oishi, University of Virginia, USA

In two studies, we examined whether residential mobility predicts uniqueness seeking tendency in consumption preferences. Past research has established that residential mobility enhances one's personal self (e.g., personality, skills) whereas residential stability enhances one's collective self (e.g., group affiliation, membership). We hypothesized and found that people who moved more frequently exhibited a stronger tendency to prefer unique shapes (Study 1) and to have less common consumer products than those who moved less (Study 2). In particular, this tendency was more salient when the products were more publicly visible than when those products were less visible.

For more information contact: mkoo@illinois.edu

***Gender Differences in Online Shopping Behavior: Exploring the effective promotion types based on evolutionary psychology***

Doo Yeon Park, University of Georgia, USA\*

Hyejin Bang, University of Georgia, USA

Dongwon Choi, University of Georgia, USA

This study aims to examine the gender differences in online shopping context based on evolutionary psychology. As the foraging activities of ancestral environments are similar to the shopping behaviors of modern societies, the psychological adaptations may influence the behaviors of modern consumers. In the ancestral environments, men were needed to be skilled hunters while women were needed to be proficient gatherers, and this adaptation still remains in modern human's body and brain. This study explores the effective promotion types for online shopping based on gender-specific time frame and preference which are derived from each gender's ancestral roles, hunter and gatherer.

For more information contact: doopark@uga.edu

***Default Effects on Online Information Disclosure: A Regulatory Focus Perspective***

Georgiana Craciun, Duquesne University, USA\*

Corporations, policy makers, and consumers have conflicting interests in the use of defaults to configure choices related to online privacy. Past research found support for a disproportionate preference for defaults. Drawing on regulatory focus theory, this study used a between subjects experiment to examine the proposed interaction effects between chronic self-regulatory focus and default framing on choices related to information disclosure. Prevention-oriented consumers seem to stick more to defaults than promotion oriented consumers. The largest difference is in the condition where prevention oriented people receive the negative default (and stick with it).

For more information contact: craciung@duq.edu

### ***Living Minimalism: Would a Mindset of Subtraction Be a Cure for Over-Consumption?***

Lei Jia, University of Wyoming, USA\*

Xiaojing Yang, University of Wisconsin-Milwaukee, USA

Drawing from literature on unconscious processing and mindset, this research proposes that a mindset of “subtraction” may curb over-consumption particularly for consumers who lack motivations to proactively consume less. Specifically, the mindset of subtraction (activated from an unrelated context or task) can carryover to a consumption-related context or situation, thus, subsequently influence consumer choice and decision making (i.e., consuming less). This research contributes to the literature on mindset by introducing and testing a new mindset, “subtraction,” and applying it to an important context, over-consumption.

For more information contact: [jjaleibj@gmail.com](mailto:jjaleibj@gmail.com)

### ***Relief in Working Memory as Information***

Sunaina Shrivastava, University of Iowa, USA\*

Gaurav Jain, University of Iowa, USA\*

Dhananjay Nayakankuppam, University of Iowa, USA

Gary Gaeth, University of Iowa, USA

The paper shows that individuals use relief in the use of working memory as an informative signal while evaluating entities. Specifically, we show that individuals have enhanced attitudes towards an object that is formed when its parts combine to form a whole when compared to the case where the object is shown as a whole only. When parts come together to form a whole, individuals relieve their working memory by just storing the whole. With multiple studies we demonstrate the phenomenon and find support for the memory conservation based process. The results have implications in designing more effective marketing logos.

For more information contact: [sunaina-shrivastava@uiowa.edu](mailto:sunaina-shrivastava@uiowa.edu)

### ***The Picky Consumer***

Andong Cheng, Pennsylvania State University, USA\*

Margaret Meloy, Pennsylvania State University, USA

While the term “picky consumers” is colloquially understood as it pertains to others, there is no research in marketing that has examined how picky shoppers make decisions. We take initial steps to assist in studying the construct by developing a “Picky Consumer” scale that distinguishes this construct from other individual differences (e.g. maximizing) and provide evidence for how pickiness affects choice processes. We establish that pickiness is determined by two major factors: selectivity and sensitivity to product flaws. Furthermore, we confirm that picky people have smaller consideration sets and place higher attribute weights on single attributes.

For more information contact: [auc245@psu.edu](mailto:auc245@psu.edu)

### ***Affective Reactance to Approaching Brands***

Junghan Kim, State University of New York at Buffalo, USA

Junghyun Kim, Virginia Tech, USA

Taehoon Park, University of South Carolina, USA\*

The present study examined how a moving image influences on perceivers' reaction to the agent in a marketing setting. Through two studies, we investigated whether visual image movement varies participants' attitude toward the brand. In a brand evaluation context, participants who were exposed to an approaching logo evaluated the brand less favorably than those who were exposed to a static or receding logo. Furthermore, we found that the affective reactance to an approaching image led to more favorable attitudes toward the product when safety attribute was emphasized.

For more information contact: taehoon.park@grad.moore.sc.edu

### ***Utilitarian Mask: A Remedy for Devaluation of Hedonic Products***

Aditya Udai Singh, Oklahoma State University, USA\*

JI Hoon Jhang, Oklahoma State University, USA

A characteristic particular to online shopping is the time interval between purchase and acquisition of a product. This time lag may lead consumers to reevaluate their purchase decision. In this paper, we seek to understand how consumer's post-purchase (yet pre-acquisition) evaluation would change as acquisition gets nearer in time and to propose options for managers to maintain or enhance consumer's post-purchase evaluation. The result of one study supports our hypothesis that post purchase evaluation for hedonic (utilitarian) products would increase (decrease) if the purchase is described a second time with utilitarian (hedonic) features because these are easy-to-justify (i.e., utilitarian features).

For more information contact: jihoon1206@gmail.com

### ***I bought that first and you know it: The influence of ambivalent mimicry on the desire for social approval***

Sunghye Jun, Seoul National University, South Korea\*

Y. Jin Youn, Seoul National University, South Korea

Kiwan Park, Seoul National University, South Korea

Prior research shows that mimicry can lead to dissociation responses due to its threat on uniqueness as well as a sense of social approval. We build on prior work by suggesting that this may not be the case with ambivalent mimicry (i.e., it is not clear whether mimicry happened). In these situations, the target may not feel the need to dissociate with the product but also feel a lack of social approval. Hence, we argue that consumers who experience ambivalent mimicry will not value the product less nor dislike it, but will seek ways to gain social approval (e.g., WOM).

For more information contact: jinjinyoun@gmail.com

***Resource Conservation: An Alternate Explanation for Negative Emotions' Impairment of Self-Control***

Shruti Koley, Texas A&M University, USA\*

Caleb Warren, Texas A&M University, USA

Suresh Ramanathan, Texas A&M University, USA

Traditionally it has been regarded that negative incidental emotions impair self-control, and increase gratification in order to repair bad mood. In this research, we demonstrate that negative emotions also impair self-control to conserve resources, as exerting self-control is effortful. They do so to the extent the emotion activates the goal to conserve resources. An emotion like anxiety that signals the need for future goal-conflict resolution, is more likely to activate the goal of resource-conservation than an emotion like anger. Hence anxiety impairs self-control more than anger, when self-control is effortful, but not when self-control is easy.

For more information contact: [skoley@mays.tamu.edu](mailto:skoley@mays.tamu.edu)

***The Influence of Visual Transparency on Taste Perception***

Lingzi Isabel Ding, National University of Singapore, Singapore\*

Miaolei Jia, National University of Singapore, Singapore

Noriko Xiang Yan Tan, National University of Singapore, Singapore

In this paper, we develop a conceptual framework on the perceptual transfer of the visual characteristics of product containers to the taste perception of the products. Specifically, we find that the visual transparency (vs. opacity) of the container in which a beverage is served influences the perceived thickness of the beverage. Drawing upon the “sensation transference” theory, we propose and found that individuals attribute the perceived thickness of the beverage to the visual density of the container it is served in. This contributes to the sensory marketing and perception literature, and has important implications on beverage packaging designs.

For more information contact: [isabel.ding@u.nus.edu](mailto:isabel.ding@u.nus.edu)

***Giving Money vs. Giving Time: The Timing Effect of Thank-You Gifts on Donation Satisfaction***

Miaolei Jia, National University of Singapore, Singapore

Lingzi Isabel Ding, National University of Singapore, Singapore\*

Thank-you gifts are widely used in real-world charitable promotions. Given the ubiquity of thank-you gifts in charitable promotions, surprisingly little research has explored the effect of the timing of thank-you gifts on donors' donation satisfaction. Based on the theory that money activates value maximization mindset while time activates emotional mindset, we propose and demonstrate that when giving money, receiving thank-you gifts after the donation (vs. before the donation) decreases donors' donation satisfaction; in contrast, when giving time, receiving thank-you gifts after the donation (vs. before the donation) increases donors' donation satisfaction.

For more information contact: [isabel.ding@u.nus.edu](mailto:isabel.ding@u.nus.edu)

### ***Price Framing and Choice Order Effects in Bundle Customization Decisions***

Johannes C. Bauer, University of St. Gallen, Switzerland

Tim M. Böttger, University of St. Gallen, Switzerland\*

This research demonstrates that consumers' satisfaction with a customizable bundle depends on (1) whether the choice options for the bundle components are presented simultaneously or sequentially and (2) whether (or not) detailed segregated prices for all choice options are provided in addition to the total price of the bundle configuration.

For more information contact: johannes.bauer@unisg.ch

### ***A Brand-Contingent Weighting Model***

Hyun Young Park, China Europe International Business School, Shanghai, China\*

Sue Ryung Chang, University of Georgia, Terry College of Business, Athens, GA

Prior research that modeled consumer decision processes treated brand merely as an attribute parallel to price, color, or size, and thus, assigned a constant weight to each attribute across brands. In contrast, we propose a brand-contingent weighting model in which attribute importance is contingent upon (1) the relative positioning of a brand among the brands considered, and (2) brand familiarity. Using a real flight ticket purchase data, our dynamic multi-level model reveals the power of brand that even overcomes the negativity effect that has shown to be prevalent in consumer choices.

For more information contact: hpark@ceibs.edu

### ***Grip not to Slip: How Haptic Roughness Leads to Psychological Ownership***

Bowen Ruan, University of Wisconsin - Madison, USA\*

Joann Peck, University of Wisconsin - Madison, USA

Robin Tanner, University of Wisconsin-Madison

Liangyan Wang, Shanghai Jiao Tong University

In a series of studies, we found that haptic roughness leads to a greater perception of psychological ownership, and longer interactions, compared to haptic smoothness. We conjecture that this is because rougher objects are easier to grip, leading to more physical control, an antecedent of psychological ownership.

For more information contact: bruan@wisc.edu

### ***Need for Completion***

Bowen Ruan, University of Wisconsin - Madison, USA\*

Evan Polman, University of Wisconsin - Madison, USA



We propose that people have an inherent need for completion, which provides extra motivation when they are close to the completion of a set, even if completing the set brings no external values but costs. In a series of studies, we show that people are more motivated to try an ice cream flavor/visit a new city/even do a tedious task when the ice cream flavor/the city/the task is the last item in a set than when it is the second to last. Our research builds on but is sufficiently different from prior work on goal gradients.

For more information contact: [bruan@wisc.edu](mailto:bruan@wisc.edu)

***Low Construals Prefer Atypical Colors***

Ji Yoon Uim, Hongik University, Republic of Korea\*

Nara Youn, Hongik University, Republic of Korea\*

The current research examines how atypical (vs. typical) color affects consumer information processing and examines the moderating role of construal level. Through two studies, we demonstrate that atypical color would lead to favorable evaluation of product more for consumers with low level than for those with high level construals.

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

**Reception**  
**6:00 pm - 8:00 pm**  
**Banyan Breezeway**

# Saturday, 27 February 2016

## Registration

7:00 am - 3:45 pm

Grand Palm Col. West

## Breakfast

7:30 am - 8:15 am

Grand Palm Col. West

## Session 5

8:15 am - 9:30 am

### ***Symposium: When Products and Devices Seem Human and Humans Feel Like Machines: Antecedents of Anthropomorphism and Consequences of Dehumanization***

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

#### ***Knowledge About a Product's Creator and Its Effect on Product Anthropomorphism***

Pankaj Aggarwal, University of Toronto, Canada

Valerie Folkes, University of Southern California, USA\*

Consumers sometimes anthropomorphize products, imbuing nonhuman objects with humanlike characteristics (Aggarwal and McGill 2007; Epley, Waytz, and Cacioppo 2007; Guthrie 1993). According to the SEEK model (Epley et al. 2007), one key basis of anthropomorphizing is the activation of knowledge structures about humans. The current research focuses on a similar cognitive process, and proposes a novel factor—beliefs about human-essence transfer—as a key antecedent of anthropomorphism. We propose that people are more likely to anthropomorphize products when given information about the person who created the product because such information activates knowledge about the creation process and essential characteristics of human nature associated with the creator, which transfers humanness to the product. We suggest that people believe that a person who creates a product endows that product with a small part of his or her own self. Once the creator is seen as residing in the product, the product is imbued with humanness. We call this the “Gepetto effect” after the classic children’s tale from Italy, *The Adventures of Pinocchio* (Collodi and Mussino 1968), which describes a woodcarver named Gepetto whose creation of a puppet becomes human.

We propose that consumers’ lay beliefs about the creation of a product often facilitate anthropomorphism of the product. The creation may be perceived to be the physical embodiment of the beliefs and character, the spirit and ambition, the goals and aspirations, and indeed, the humanness of its creator. Like conceiving a child is the unique instance where essence is transferred through one’s DNA to an offspring, the transfer of the creator’s essence to the product can be similarly perceived.

People often engage in magical thinking that a person has a hidden and unique essence composed of immaterial qualities that can leave one’s corporeal self and transfer itself on to an object through physical contact (Nemeroff and Rozin 1994). For instance, a T-shirt just tried on by a stranger is liked less and is less likely to be bought than when a T-shirt appears untouched (Argo, Dahl, and Morales 2006). We propose that touching may not be necessary because when an individual creates something, the individual is the origin and source of all causal forces acting upon the creation and is entirely responsible for the manifestation of those causal forces on the object. According

to the property transmission hypothesis, “causes tend to impose their own properties on effect objects” (White 2009, p. 775). That is, a creator imposes his or her properties on a product. Further, the properties most likely to be transmitted are those that relate to perceptions of human essence.

Many people believe that deep properties within a living thing—the essence—cause observable behavior (Gelman 2003). Some behaviors are likely to be more revealing of a person’s unique essence than others. The act of creating something is by definition distinctive and so reveals more of the creator’s essence. Research shows that the essential characteristics of a creative person are openness to new ideas, independence, imagination, and inquisitiveness (Sternberg 1985), properties that are also fundamental to human nature (Haslam et al. 2005). Hence, when a consumer is told about a person creating a product, these traits are likely to be activated, which will activate the essence of what makes us human.

## **Hypotheses**

H1: When a product is seen as being created by a person, it is more likely to be anthropomorphized than when the product is not seen as being created by a person.

H2a: Products that are created by a person with traits characteristic of human nature are more likely to be anthropomorphized than those created by a person not associated with traits characteristic of human nature.

H2b: The effect of human nature traits on product anthropomorphism noted in H2a above will be mediated by the perceived human-essence transfer to the product.

## **Three Experiments**

Three studies test the hypotheses noted here. Study 1 exposed participants to a brief description of four different products (Roomba, Deep Blue, Clocky (a wheeled alarm clock), and Pillow Mate (a torso-shaped pillow). Participants were asked to draw a sketch of the four products. Results revealed more anthropomorphized images were drawn when the participants thought that the product was created by a person than by a company. Study 2 examines the Gepetto effect when the creator possesses traits that are more or less associated with human nature, while controlling for social desirability. Results show that high human traits significantly predict the degree of anthropomorphism of the product created by the creator. Study 3 replicates the results of Study 2 in the context of the human trait of warm-heartedness – a trait unrelated to the act of creating a product. Furthermore, Study 3 shows that human-essence transfer fully mediates the effect of creator warmth on anthropomorphism.

Across three different studies we find converging evidence in support of the premise that if a product is associated with a person as its creator, then that product is more likely to be anthropomorphized compared to a product that is not associated with its creator. We find evidence that this effect occurs because the essence of the creator gets transferred to the product through the very act of product creation.

Our research contributes to the burgeoning anthropomorphism literature by proposing a new antecedent of anthropomorphism. In addition to its theoretical value, our research highlighting the Gepetto effect has practical implications for marketers who may be able to encourage buyers to anthropomorphize inanimate products—via information that links the product with its creator.

For more information contact: [aggarwal@utsc.utoronto.ca](mailto:aggarwal@utsc.utoronto.ca)

*Anthropomorphism From Self-Extension and Self-Expansion Processes: An Assemblage Theory Approach to Interactions Between Consumers and Smart Devices*

Donna Hoffman, George Washington University, USA\*

Tom Novak, George Washington University, USA

Hyunjin Kang,

Hoffman and Novak (2015) have proposed using assemblage theory (DeLanda 2006) to conceptualize consumer experience in the Internet of Things (IoT). Their framework formally identifies consumer experience as emerging from consumer interactions with smart devices in IoT assemblages. Paired capacities exercised in these interactions specify how consumers and smart devices can affect and be affected by each other. This conceptualization links self-extension (Belk 1988) and self-expansion theories (Aron and Aron 1986) in a larger theoretical framework, where anthropomorphism is an outcome of self-extension and self-expansion.

Recently, Connell and Schau (2013) noted there is some confusion in the marketing literature over the distinction between self-expansion and self-extension. Belk's (1988) self-extension theory largely deals with how brands can bring more meaning to consumers' lives through a process where the self is extended into those brands. Through the self-extension process, consumers invest the object with emotions or feelings, so that the object takes on significance beyond a mere possession. In self-expansion theory (Aron, et al. 1991), people are motivated to form close relationships with others because it expands their ability to accomplish goals. Self-expansion through close relationships contributes to the formation of our own identities and is achieved by incorporating the resources, perspectives and identities of a close other into one's self (Aron, et al. 2004). Connell and Schau (2013) and Belk (2014) conclude that both self-extension and self-expansion are useful for understanding the relationships that people have with objects.

In our assemblage theory framework, the self-extension process captures the paired capacity of the consumer to affect smart devices and the capacity of smart devices to be affected by the consumer. Self-extension implies that the consumer is in control of the identity they project from themselves into the device. But paired capacities can also operate in the other direction. The self-expansion process captures the paired capacity of the device to affect the consumer and the capacity of the consumer to be affected by the device. With self-expansion, the device is in control of the identity that the consumer absorbs into the self. Thus:

H1: When the consumer has more control in the interaction, self-extension will be greater than self-expansion; with less control, self-expansion will be greater than self-extension.

We propose that anthropomorphism is a key mediating emergent experience from the interaction among the paired capacities of the consumer with smart devices. Anthropomorphism is the tendency for people to ascribe human-like characteristics, emotions and behaviors to objects (Epley, Waytz and Cacioppo 2007). Waytz et al. (2010) found that more unpredictable devices were seen as more anthropomorphic. Greater unpredictability corresponds to less control, thus:

H2: When the consumer has less control in the interaction, anthropomorphism will be greater compared to when the consumer has more control.

Some research has suggested that anthropomorphism lies on a continuum from a minimal kind of anthropomorphism where you attribute human traits to an object, all the way to seeing the object as human with a "mind of its own" (Aggarwal and McGill 2007). We theorize that such device complexity could moderate whether anthropomorphism occurs through a self-extension or self-expansion processes. In the self-extension process, anthropomorphic experience more likely arises from the consumer's capacity to directly affect simple devices (so-called "long finger" interactions). Consumers might have an easier time extending their essence into the device when it is simple,

similar to the “Gepetto” effect (Aggarwal and Folkes 2015, in this proposal). However, in the self-expansion process, anthropomorphic experience more likely arises from a complex device’s capacity to affect the consumer through autonomous, ambient interactions.

H3: For devices that the consumer has the capacity to effect (self-extension), anthropomorphism will be greater for simple compared to complex devices. For devices that have the capacity to affect the consumer (self-expansion), anthropomorphism will be greater for complex compared to simple devices.

Study 1 was a manipulation check for the control manipulation based on 101 participants. Across 32 devices (2 new scenarios and 30 of the devices based on Waytz et al. 2010), participants reported significantly less perceptions of control ( $M=3.26$ ) when devices behaved unpredictably compared to when the participant could program the device ( $M=5.34$ ;  $F(1, 99) = 82.176, p = .000$ ).

Studies 2 and 3 tested H1-H3. In study 2, 201 participants evaluated the same 32 devices in a 2 (low vs. high control) x 2 (self-extension vs. self-expansion) design to test H1. For each device, participants indicated either their perceptions of self-extension (“to what degree do you have the capacity to affect [device]?”) or self-expansion (“to what degree do you have the capacity to be affected by [device]?”). Results supported H1. Self-expansion ( $M=4.23$ ) was greater than self-extension ( $M=3.16$ ) for low control, and self-extension ( $M=4.61$ ) was greater than self-expansion for high control ( $M=3.97$ ;  $F(1,197)=51.243, p = .000$ ).

In study 3, 352 participants evaluated device anthropomorphism in a 2 (self-extension vs. self-expansion) x 2 (low vs high control) x 2 (simple vs. complex device) design. Results supported H2 and H3. There was less anthropomorphism when control was high ( $M=1.80$ ) compared to when it was low ( $M=2.25, (F(1, 344) = 10.13, p = .002)$ ). In the self-expansion conditions, the complex device ( $M= 2.29$ ) was more anthropomorphic than that simple device ( $M=1.89$ ) and in the self-extension conditions, the simple device was more anthropomorphic ( $M= 2.10$ ) than the complex device ( $M= 1.87$ ) with the corresponding two-way action significant ( $F(1, 344) = 4.13, p=.043$ ).

Our studies support the idea that the self-extension and self-expansion processes can both lead to anthropomorphism. These results, plus an exploratory Study 4 that provides correlational evidence that consumers view interactions with smart devices in terms of paired capacities, lay the groundwork for additional experiments on anthropomorphism arising from paired capacities in different interaction scenarios. Consumers desire for devices to be more “real” than they actually are can satisfy effectance and sociality motivations (Epley, et al. 2008). For example, we hypothesize that in the self-expansion process, consumers’ need to feel a sense of mastery over the interaction may increase feelings of anthropomorphism for complex devices. Additional studies are in progress to examine these effects.

For more information contact: dlhoffman@gwu.edu

### ***When Humans Feel Like Machines: The Impact of Mechanic Dehumanization on Food Consumption***

Andrea Weihrauch, Katholieke University Leuven, Belgium\*

Szu-Chi Huang, Stanford University, USA

More than two thirds of adults in the United States are overweight (Centers for Disease Control and Prevention, 2004). A strategy often adopted to improve the health of the general population is to provide education on how human body and digestive system work – displaying human body as machines and demonstrate the mechanics (i.e., input-to-output) of food consumption. The belief is that the more consumers see their body as an input-output-based mechanic process, the more they would regulate themselves. Interestingly,

advertisers also use “human-as-machines” as the jumping point to motivate indulgence (e.g. “Feeling like a machine? Have a Kit Kat”), suggesting that while a mechanic view of human body could lead to healthy choices, an anti-mechanic view could facilitate indulgence.

In this research we explore the conditions in which mechanic dehumanization (Haslam 2006, Waytz and Epley 2012) is facilitative or inhibitive of health behaviors. We find that while consumers’ lay belief indeed supports the notion that approaching food decisions from a mechanistic input-output perspective is preferred, its impact on actual health behavior is less straightforward. Specifically, people with high health self-control respond favorably to “humans-as-machines” stimuli and consequently make healthier food choices, whereas the same stimuli backfire among those with low health self-control, because they perceive mechanic processing in the health domain to be rather unfeasible.

In study 1, we asked 97 participants (58.3% female,  $M_{\text{age}} = 37.04$ ) about their lay beliefs of mechanistic processing in the health domain. They read six health-choice scenarios and were asked how people should make these choices. Participants reported using mechanistic processing as the goal, and preferred and liked this approach more. Importantly, people with high health self-control (Moorman and Matulich 1993) found the mechanic processing to be more feasible (feasible, easy, attainable, capable, Cronbach’s Alpha = .877,  $M = 5.18$   $SD=1.40$ ) than participants with low health self-control ( $M = 4.12$ ,  $SD=1.25$ ),  $F(93)=15.54$ ,  $p=.000$ .

In study 2, we replicated study 1 using a different manipulation of mechanic dehumanization—mechanic agents from the technology company Anybots ([www.anybots.com](http://www.anybots.com)). Participants ( $n = 61$ , 54.13% female,  $M_{\text{age}} = 21.84$ ) operated the mechanic agents for eight minutes, and then reported their attitude toward mechanic processing. We found that those low in health self-control considered it moderately less feasible ( $M = 4.78$ ,  $SD = 1.57$ ) than those high in health self-control ( $M = 3.85$ ,  $SD = 1.63$ ),  $F(58) = 3.65$ ,  $p = .063$ .

In study 3, we explored the behavioral consequences of mechanic dehumanization. Previous research has shown that if a goal appears too difficult to attain, a disengagement from the goal or even a contrasting behavior could occur (Klesse et al. 2012). 99 participants (48.0% female,  $M_{\text{age}} = 32.62$ ) saw a picture of human digestive system; the picture either displayed human body as human (i.e., real organs), or as a machine (i.e., input-output-based factory). Upon writing their thoughts about the picture, participants then chose a coupon for a real snack they would receive. We found a significant mechanic processing  $\times$  health self-control interaction  $F(94)=3.71$ ,  $p = .057$ ), such that people low in health self-control chose snacks with higher caloric content when exposed to the machine image that activated mechanic processing ( $M = 544.23$ ,  $SD = 117.21$ ), comparing to those exposed to the human image ( $M = 460.87$ ,  $SD = 162.37$ ), this difference was not significant among those with high self-control.

In study 4, we replicated the findings of study 3 with a different manipulation of mechanistic dehumanization—morphing participants’ faces into either a pencil drawing (human) or a robotic drawing (mechanic)— and the addition of a control condition (no morphing). We also directly manipulated health self-control instead of measuring it. We ruled out alternative explanations such as self-esteem (Rosenberg 1965), situational self-control (Sheldon, Ryan and Reis 1996), or self-awareness (Govern and Marsch 2001). We again found a significant mechanic processing  $\times$  health self-control interaction,  $F(230)=3.47$ ,  $p=.033$ ). Those low in health self-control chose snacks with higher caloric content in the mechanic condition ( $M = 522.75$ ,  $SD = 150.84$ ) than in the human condition ( $M = 435.47$ ,  $SD = 136.24$ ) or the control condition ( $M = 459.27$ ,  $SD = 153.69$ ); the latter two groups were not significantly different.

In study 5, we further explored the process underlying the effect of mechanic processing. We hypothesized that those with low health self-control made unhealthy choices because they perceived mechanic processing to be unfeasible for themselves. If this is indeed a self-regulatory phenomenon, then we would not observe this backfire effect when these individuals make food choices for others. We used the same mechanic stimuli as study 3 and health self-control manipulation as study 4; participants ( $n = 221$ , 61.5 % female,  $M_{\text{age}} = 21.83$ ) either chose a snack for themselves or other participants. We found a mechanic processing  $\times$  health self-control  $\times$  choice target

interaction, such that those low in health self-control chose snacks with higher caloric content only for themselves, but not for others ( $F(214)=3.16, p=.077$ ).

In the last study, we introduced an intervention tool to help low health self-control individuals overcome the perception that mechanistic processing is unfeasible for them. Participants ( $n = 215$ ; 67.9 % female,  $M_{age} = 22.56$ ) saw the machine stimulus used in study 3 and either read an article about water (control condition) or about how humans and machines were similar (feasible condition) or different (unfeasible condition). They then chose a coupon for one out of nine yogurts that differed in caloric and fat contents. We again found that in the control condition, participants low in health self-control chose yogurts with higher caloric and fat content upon viewing the mechanic stimulus. However, when reading about the similarities they had with machines, they made healthier choices.

For more information contact: [andrea.weihrauch@kuleuven.be](mailto:andrea.weihrauch@kuleuven.be)

## ***Symposium: Time and Affect***

**Chair:** Evan Weingarten, University of Pennsylvania, USA

### ***The Revision Bias: Preferences for Revised Experiences Absent Objective Improvement***

Leslie John, Harvard Business School, USA\*

Michael Norton, Harvard Business School, USA

Many authors (academic and otherwise) have felt that although critics and reviewers preferred revised versions of their work, the original version was the better product – that reviewers preferred the revision simply because it was revised, rather than improved. In three experiments, we offer empirical evidence of this “revision bias”: people prefer experiences and products that have been revised over time, regardless of whether newer versions are objectively better than their predecessors. Moreover, we show that the revision bias is independent of the input bias (Chinander and Schweitzer 2003), which refers to the confounding of effort with quality – people, often sensibly, think that the more effort that is put into producing something the higher the quality (see also Buell and Norton 2011; Kruger, Wirtz, Van Boven, and Altermatt 2004).

In Study 1, we document the revision bias in an experiential context in which participants ( $N = 239$ ) consumed two gummy candies. The study was a within-subjects design in which participants were told that one of the candies used a refined recipe and were given no such information about the other candy. Specifically, participants were given a candy and told that it was the “final, market-ready version of the recipe” but that “before the recipe was finalized, the company had tried several different recipes before finalizing the current formulation” (revision condition). Participants then ate the candy and rated its quality and tastiness. They were given another candy and simply ate it and rated its quality and tastiness (control condition). As control factors, between-subjects, we randomized the order of candy version and the ascription of candy to version; these factors had no effect on ratings, and so we collapse across them. As predicted, participants deemed the revised version to be better tasting and of higher quality than the control version,  $t(238)=2.41, p=.017$ . These results held even when we controlled for participants’ perceptions of the effort that the candy manufacturer put into making the candy.

In Study 2, we extend the revision bias to a new context: writing. Participants ( $N = 199$ ) were shown two versions of a person’s resume – a “first draft” and a “revision” – and rated the overall appeal of each. Critically, the only difference between the two drafts was trivial, the font: one of the resumes appeared in Times New Roman while the other resume appeared in Arial. We manipulated the ascription of font to draft: for some participants, the “first draft” was in Arial whereas the “revision” was in Times New Roman, while the reverse was

true for other participants (we collapse across this factor in our analyses). As predicted, participants rated the revised version as significantly more appealing relative to the first draft,  $t(198) = 4.02$ ,  $p < .0005$ . We find this effect particularly surprising given that the triviality of the revision was fully transparent: the two versions were presented side-by-side on the same page of the survey. Therefore, participants could plainly see that the resumes were not substantively different but nonetheless rated the revision to be better.

In Study 3, we differentiate revision bias from input bias (Chinander and Schweitzer, 2003). The preference for the revised resume in Study 2 could arise because the total effort put into it is necessarily greater than that put into the first draft (since the revised draft represents the sum of all effort put into the first draft, plus that put into the revision). Study 3 addresses this alternative explanation by pitting effort (operationalized by the total amount of time the candidate has spent on the resume drafts) against revision status. As in Study 1, participants ( $N = 210$ ) rated the appeal of a resume. Between-subjects, we manipulated the total amount of time spent on the drafts (10 minutes versus 30 minutes) and revision status (first draft versus revision). As in Study 2, the two versions differed only in font. As predicted, we found only a main effect of revision status,  $F(1, 206) = 4.52$ ,  $p = .035$ . Regardless of effort, participants found the revised resume more appealing. Indeed, participants rated a revised resume on which a person had ostensibly spent a total of 10 minutes as more appealing than a first draft on which a person had spent a total of 30 minutes.

Taken together, these experiments suggest that authors' feeling that reviewers prefer revisions simply because they are revisions may – at least in some cases – be warranted. Controlling for the actual quality of both foods and resumes, people rated revisions as being of higher tastiness and higher quality than versions they were told were “originals.” While in these experiments we did not ask participants themselves to give feedback on originals and then sample products revised in response to their concerns, we suspect that people are likely to rate revisions on which they have provided input as particularly stellar – again, independent of any actual improvement.

For more information contact: [ljohn@hbs.edu](mailto:ljohn@hbs.edu)

### ***Enjoying the Unexpected: Prior Uncertainty Improves Hedonic Experiences***

Anna Paley, New York University, USA\*

Tom Meyvis, New York University, USA

Robyn LeBoeuf, WUSTL, USA

Leif Nelson, Berkeley, USA

Consumers' experiences often vary in the extent to which the specifics of that experience are known in advance. For example, consider the pleasure of listening to a familiar song that you selected on your iPod – a certain experience, where you knew exactly what you would hear. Now, contrast this against the delight of unexpectedly hearing that same song on the radio. The current research explores a similar distinction, demonstrating that uncertain experiences – those with less preceding information – may be more enjoyable than certain experiences.

While consumers usually like to be informed about upcoming experiences, some amount of prior uncertainty may actually increase enjoyment. Indeed, the successes of Apple's iPod Shuffle and Internet radio sites such as Pandora.com are testaments to the benefits of hedonic experiences that are not fully known in advance.

In four studies, we vary the amount of prior information given to participants and provide evidence, across multiple domains, that hedonic experiences can be more enjoyable when less prior information is available about them. Our findings indicate that this effect cannot be explained by the preceding uncertainty being pleasurable, but rather is driven by the joy of recognition – the momentary



pleasure that arises when a familiar stimulus is unexpectedly recognized (study 1-3). The favorable effect of not disclosing an experience in advance occurs for both music (studies 1-3) and food (study 4) experiences, but disappears when participants are not sufficiently familiar with the stimuli (study 3).

In study 1, all participants listened to five 30-second fragments of well-known songs (e.g. Billie Jean by Michael Jackson). Half of the participants had no prior knowledge of the songs they would hear, while the others were exposed to the title and artist of each song in advance. Participants rated their enjoyment of the experience during the first few seconds of each song, and immediately after the last song ended. Results show that participants who had no prior information about the songs enjoyed the experience more ( $F_{\text{online}}(1, 102) = 6.79, p = .011$ ;  $F_{\text{retrospective}}(1, 103) = 5.52, p = .009$ ). This effect was mediated by self-reported excitement at the start of each song, consistent with the idea that recognition produces a momentary pleasure that improves overall enjoyment.

While study 1 implies that the positive impact of uncertainty is strongest during the first few seconds of an experience, study 2 tests this directly. This study replicated the procedure of study 1 with three one-minute song clips. We additionally manipulated whether participants rated their enjoyment of each song during the first few seconds of the song (as in study 1) or during the last few seconds of each song. Results show a reliable interaction. Among participants who rated each song during the first few seconds, prior uncertainty again increased enjoyment ( $F(1, 371) = 5.38, p = .021$ ). On the other hand, participants who rated each song during the last few seconds did not show this benefit of prior uncertainty ( $F < 1$ ). This attenuation provides additional evidence that the momentary pleasure of recognition improves the evaluation of experiences.

For prior uncertainty to increase the enjoyment of experiences through the momentary pleasure produced by recognition requires that the stimuli are in fact recognizable. While studies 1-2 used familiar stimuli to ensure recognition, study 3 explored familiarity as a boundary condition.

We selected 10 current popular songs to naturalistically vary familiarity. Participants first indicated their familiarity with each song. Then all participants listened to 30-second fragments of three of the songs and evaluated their experience. Half of the participants were given the title and artist of each song in advance, whereas the other half were not told which songs would play. We expected that in this latter uncertain condition, the prior familiarity with the songs would matter. If people were familiar with the songs, then hearing each song should produce the joy of recognition. However, if people were not familiar with the songs, then hearing the song will also resolve the prior uncertainty (as the actual experience is being revealed) but would not produce the pleasurable moment of recognition.

Consistent with this reasoning, the effect of prior uncertainty on enjoyment depended on participants' familiarity with the songs ( $t_{\text{interaction}}(192) = 2.67, p = .008$ ). That is, only participants high in familiarity with the songs experienced a positive impact of prior uncertainty. Moreover, this interaction was mediated by the self-reported experience of pleasant surprise, further implicating the joy of recognition as the causal mechanism. In addition, since all participants were given the list of 10 possible songs in advance, this study controls for different expectations between conditions and demonstrates that the effect generalizes to more subtle manipulations of prior uncertainty.

Study 4 extends the pleasurable effect of prior uncertainty into a new domain (food). First, all participants sampled the three well-liked jellybeans to familiarize themselves with the flavors. Next, they tasted one of the three flavors again. While some participants were told in advance what flavor they would eat, others only knew that they would taste one of the three flavors again. Results show that participants who did not know exactly what they would taste enjoyed the experience more than their counterparts who knew exactly what was coming ( $F(1, 125) = 5.46, p = .021$ ).

Overall, this research expands the theoretical understanding of uncertainty, suggesting that prior uncertainty can improve the evaluations of positive experiences. While prior research has demonstrated that a state of uncertainty can increase positive mood, (e.g. Bar-Anan, Wilson, and Gilbert 2009; Kurtz, Wilson, Gilbert 2007; Lee and Qui 2009; Wilson, Centerbar, Kermer, and Gilbert 2005), our current findings indicate that revealed experiences can also be more enjoyable if they were initially uncertain to begin with. Further, this effect does not seem to be driven by the enjoyment of the prior uncertainty, but rather by the joy of recognition, or the delight of encountering a positive and familiar stimulus. These findings add to our understanding of the role of uncertainty in consumption experiences, and can guide managers in creating more enjoyable experiences for consumers.

For more information contact: [apaley@stern.nyu.edu](mailto:apaley@stern.nyu.edu)

### ***Duration Consideration***

Kristin Diehl, University of Southern California, USA

Evan Weingarten, University of Pennsylvania, USA\*

Gal Zauberman, Yale University, USA

One classic finding is duration neglect. That is, when individuals provide evaluations of the pleasure or discomfort they experienced, the peak and end of the experience strongly correlate with overall retrospective evaluations, while the marginal impact of duration on evaluations becomes small when controlling for peak and end (Fredrickson and Kahneman 1993). This finding triggered multiple papers that examined moderators of duration neglect (Ariely and Loewenstein 2000; Morewedge et al. 2009).

Duration, however, may actually have a systematic indirect, multiplicative, effect on evaluation by influencing how people actually experience the peak and end moments. While the impact of duration after controlling for peak and end may be small, prior literature does in fact contain some evidence of a relationship between duration and peak/end (Fredrickson and Kahneman 1993; Redelmeier and Kahneman 1996).

We propose and demonstrate that duration affects the experienced key moments (peak, end), and hence duration has a multiplicative indirect effect on evaluation through these moments. This idea is consistent with recent developments in mediation suggesting that theoretically important indirect effects may exist even in the absence of direct effects (Zhao, Lynch, and Chen 2010). It is also conceptually related to a stream of research suggesting that events that occur during a time frame may influence duration (e.g., Ahn, Liu, and Soman 2009; Zauberman et al. 2010) but instead tests the opposite causal flow: duration may affect peak and end events that occur during it.

To test this idea, we conceptually replicate Fredrickson and Kahneman's (1993) experimental setup using aversive sound clips. In a first set of two studies, we manipulated the duration of sound clips. Participants listened to three 20-second and three 60-second pattern-less aversive sounds (blocks counterbalanced). Participants provided moment-to-moment ratings of their discomfort while listening to the sounds, and then rated overall evaluations of discomfort after each sound. The most extreme moment-to-moment rating became peak, and the rating at the final second became the end.

In these two studies, we found three key results. First, we replicate the classic duration neglect: peak and end had significant effect on overall evaluations while duration had a small, if any, direct effect.

Second, as we proposed, duration had an impact on peak/end. Specifically, longer duration led to more extreme peak and end ratings, which is consistent with escalation (Coombs and Avrunin 1977).

Third, and most importantly, we observed a significant indirect effect of duration through peak/end on evaluation, demonstrating that duration has a multiplicative influence on how people evaluate experiences. These results were observed in the six-clip (within-subject) design as well as in the first clip alone (between-subject) design. Therefore, using a design that replicates Fredrickson and Kahneman's (1993) original duration neglect study, we find evidence for an indirect effect of duration.

In a second set of three studies that replicate the original duration neglect design, we use longer or shorter sound clips each with a single, five-second amplified peak always placed fifteen seconds before the end. This manipulation ensures that duration to the peak varies between participants to be longer or shorter, but the peak and end are objectively identical. Participants again provided moment-to-moment ratings of three shorter (20 seconds) and three longer (60 seconds) otherwise pattern-less clips (blocks counterbalanced), and provided overall discomfort evaluations following each clip.

These three studies replicate the three main aforementioned results (duration neglect, a main effect of duration on peak and end, and a significant indirect effect) for the six-clip (within-subject) and first-clip alone (between-subject), demonstrating the generalizability of the results.

Therefore, in the first five studies using the Fredrickson and Kahneman (1993) design, we find a theoretically-important indirect effect of duration on evaluation through key moments (peak, end). We next use a different design in which we elicit peak and end pain without moment-to-moment ratings to bolster the generalizability of this finding.

To validate that duration has an impact on peak and end outside of moment-to-moment ratings, we ran a study in which participants rated one of peak pain, end pain, or global evaluations directly following each clip. As in the first set of two studies, participants again listened to three shorter (20 seconds) and three longer (60 seconds) pattern-less clips (blocks counterbalanced). This time, however, participants did not make moment-to-moment ratings.

Consistent with the moment-to-moment studies, direct ratings of the peak pain, direct ratings of end pain, and ratings of discomfort in global evaluations were also more severe for longer than for shorter clips.

To validate that we could observe our indirect effect of duration on global evaluation in a design without moment-to-moment ratings, we then ran a study in which participants rated all of peak pain, end pain, and global evaluations in a counterbalanced order following listening to each clip. Participants again listened to three shorter (20 seconds) and three longer (60 seconds) pattern-less clips (blocks counterbalanced).

This study replicated our three findings of interest: duration neglect, an impact of duration on peak and end, and a significant indirect effect of duration on evaluation through peak and end. Overall, this design provides additional evidence of a multiplicative impact of duration on evaluation.

We further replicated the aforementioned two studies without moment-to-moment ratings for the single-peaked aversive clips. The results from the two pattern-less clip studies held again for the two single-peaked studies, further cementing the generalizability of our results.

Ultimately, though duration may only have a small direct effect on evaluation after controlling for peak and end, we find in nine studies with over three thousand participants that duration can exert another, multiplicative indirect effect on evaluation through peak/end. Therefore, people may not neglect duration to the extent previously thought since duration affects the perception of key experiential moments (peak, end).

For more information contact: [ewein@wharton.upenn.edu](mailto:ewein@wharton.upenn.edu)

### ***When Variety Among Activities Increases Happiness***

Jordan Etkin, Duke University, USA\*

Cassie Mogilner, University of Pennsylvania, USA

The pursuit of happiness is fundamental. People consistently rate it among their most important pursuits (Diener et al. 1995), and it permeates people's daily thoughts (Freedman 1978). Given that consumers want to be happy, what should they *do* to increase their happiness? Although research has identified specific activities that are associated with greater happiness (Bhattacharjee and Mogilner 2014; Caprariello and Reis 2013; Kahneman et al. 2004; Mogilner 2010), research has yet to look across activities to examine how the variety among them influences happiness. To further guide consumers in their pursuit of happiness, we empirically test how the variety across activities affects subsequent happiness.

Consumers can spend a given amount of time doing more or less varied activities. For example, an hour at work could be spent doing more varied activities (e.g., answering emails and making phone calls) or less varied activities (e.g., answering professional and personal emails). Likewise, a Saturday could be spent doing more varied activities (e.g., running errands, preparing food, and watching football) or less varied activities (e.g., watching football, watching basketball, and watching tennis). Would spending time on more varied or less varied activities subsequently make consumers feel happier?

We propose that whether spending time on a greater variety of activities increases or decreases happiness depends on the time period within which the activities occur.

Over longer periods of time, we expect that more varied activities will lead to greater happiness. When people repeatedly consume the same items, even positive ones, they tend to adapt and become bored with them (Berlyne 1971; Coombs and Avrunin 1977; Galak et al. 2013; Nelson et al. 2009). Variation among items introduces the necessary change to stimulate and reengage people, making hedonic adaptation less likely to occur (Brickman and Campbell 1971; Frederick and Loewenstein 1999). Hedonic adaptation, however, takes time to emerge. Experiences do not become less stimulating right away, but only with repeated or prolonged exposure (Galak et al. 2011; Loewenstein and Angner 2003). Thus only when a time period is sufficiently long for boredom to set in should doing more varied activities lead to greater happiness. We thus predict that it is over longer time periods that greater variety among consumers' activities will increase their subsequent happiness by maintaining engagement.

Over shorter periods of time, however, we predict that spending time on more varied activities will lead to *less* happiness. For one, boredom and hedonic adaptation are less of a threat over short periods of time (Frederick and Loewenstein 1999), so consumers may not benefit from the increased engagement that a variety of activities affords. Moreover, variety may prove detrimental by undermining people's sense of productivity. Consumers value feeling productive (Hsee et al. 2010; Keinan and Kivetz 2011), with feelings of productivity being a critical component of happiness (Reis et al. 2000; Seligman 2011; Sheldon et al. 1996). Over shorter time periods, it can be particularly difficult to feel productive, because short time periods afford limited opportunity to effectively transition between

tasks (Staats and Gino 2012). We thus predict that it is over shorter time periods that greater variety among consumers' activities will decrease subsequent happiness by thwarting their sense of productivity.

Five studies examine when and why variety increases (vs. decreases) happiness. We first instructed participants to engage in more or less varied activities over the course of a day (study 1a) or an hour (study 1b) and measured subsequent happiness. Results showed that spending a longer time period (i.e., a day) on more (vs. less) varied activities increased happiness ( $F(1, 128) = 13.54, p < .001$ ), but spending a shorter time period (i.e., an hour) on more (vs. less) varied activities decreased happiness ( $F(1, 82) = 5.91, p = .017$ ).

Study 2 built on these results by examining more time periods and manipulating the variety people perceived among their recent activities (rather than instructing them how to spend a certain time period). Results showed that for the longer time periods (i.e., a day, a week, a month), perceiving more variety among their activities increased participants' subsequent happiness. For the shorter time periods (i.e., 10 minutes, 30 minutes, an hour), however, perceiving more variety among their activities reduced participants' subsequent happiness.

Study 3 tested for the underlying roles of engagement and productivity in driving the effects. Similar to study 2, we manipulated the perceived variety among participants past 30 minutes, hour, and day, and in addition to subsequent happiness, we also measured how engaged and productive they felt. As predicted, over a day, perceiving greater variety among one's activities increased subsequent happiness ( $F(1, 538) = 4.37, p = .037$ ), driven by variety making the time feel more engaging ( $ab = .14, 95\% \text{ CI } [.06 \text{ to } .44]$ ). Over 30 minutes ( $F(1, 538) = 4.29, p = .039$ ) and an hour ( $F(1, 538) = 7.23, p = .007$ ), in contrast, perceiving greater variety among one's activities decreased subsequent happiness, driven by variety making the time feel less productive ( $ab = -.15, 95\% \text{ CI } [-.26 \text{ to } -.05]$ ).

Study 4 provided additional support for the underlying process in the field. We recruited university students studying in the library to participate in an hour-long study. At the beginning of the hour, we manipulated how long an hour seemed, and then instructed participants to spend the next hour working on either varied or unvaried class materials. At the end of the hour, we measured happiness, productivity, and engagement. Consistent with the prior studies, when an hour seemed short (as it naturally does), spending time on varied class materials decreased happiness ( $F(1, 126) = 12.40, p = .001$ ), driven by reduced feelings of productivity ( $ab = -.24, 95\% \text{ CI } [-.54 \text{ to } -.03]$ ). However, making an hour seem longer reversed these effects. In this case, spending time on varied class materials increased happiness ( $F(1, 126) = 3.81, p = .053$ ), driven by increased feelings of engagement ( $ab = .33, 95\% \text{ CI } [.10 \text{ to } .66]$ ).

Together, the findings empirically confirm that “variety is the spice of life” – but not of any given hour.

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

## ***Individual Papers: Consumption***

### ***Authentic Objects as Substitutes for Human Connection***

George Newman, Yale University, USA

Rosanna Smith, Yale University, USA\*

Products are often valued for their utility. In some cases, however, people value products for reasons that go beyond characteristics that they can directly see or feel. For example, an original work of art may sell for millions of dollars, while an identical duplicate is virtually worthless (Bloom 2011; Levinson 2003; Newman and Bloom 2012); and people have paid considerable amounts of money for celebrity

possessions such as President Kennedy's golf clubs, or Britney Spears' chewed-up bubble gum (Newman, Diesendruck, and Bloom 2011).

Several recent papers have found that contagion plays an important role in people's valuation of such authentic goods (Kramer and Block 2014; Newman and Dhar 2014; Newman, Diesendruck, and Bloom 2011). Contagion is commonly thought of as a form of magical thinking in which people believe that a person's immaterial qualities or essence can be transferred to an object through physical contact (Belk 1988; Bloom 2004; Bloom 2011; Frazer 1890; Mauss 2001; Nemeroff and Rozin 1994; Rozin et al. 1989; Tylor 1871). Thus, people may value an original artwork or a celebrity's possession, because they believe that those objects contain some remnant of a particular individual (e.g., the celebrity, artist, etc.).

This paper examines how preferences for authentic objects are informed by deeper psychological motivations. While contagion provides insights regarding the psychological process underlying preferences for authenticity, it does not explain why people may desire such objects in the first place. In other words, why would people want to own an object that contains another person's essence?

We propose that this phenomenon stems from a more fundamental need to belong. Prior work suggests that the desire to form social attachments with others is a fundamental human motivation (Baumeister and Leary 1995). Authentic objects may help fulfill this need because they are believed to contain the essence of a valued person (contagion). In turn, this belief creates a sense of connection with an esteemed individual, such that having contact with an authentic object may serve as a psychological substitute for having contact with the person. Across four experiments, we demonstrate that interpersonal, as well as intrapersonal, variance in the need to belong has a consequential effect on perceptions of transferred essence and subsequent preferences for authentic items.

Study 1 examined the relationship between the need to belong and contagion. Participants completed a 10-item need for belonging scale (Leary et al. 2013) and a 22-item contagion sensitivity scale which consisted of several subscales (Fedotova 2013): negative physical contagion, negative spiritual contagion, positive celebrity contagion and positive personal contagion. As predicted, we observed that the need to belong was most strongly related to the subscale measuring valuation of positive celebrity contagion since these items directly assessed willingness to own and have contact with objects that were previously touched by well-regarded others.

Study 2 examined whether need for belonging relates to the valuation of physical contact per se, while simultaneously examining several alternative explanations including the need for uniqueness and the need for control. Participants rated the extent to which they valued several objects that had been touched by well-like celebrities versus identical items that were also owned by those individuals, but had no physical contact with them. To establish boundary conditions, we also included three additional pairs of items that assessed brand name authenticity (e.g., Levi's jeans or knock off jeans). Participants then completed the need for uniqueness (Ruvio et al. 2008) need for control (Burger and Cooper 1979) and need for belonging scales. We found that need for control was not related to the valuation of either type of authenticity, while need for uniqueness was related to both. Critically, however, only belongingness was uniquely related to the valuation of authentic positive contagion items.

Study 3 tested whether the relationship between need for belonging and authenticity is explained by perceptions of transferred essence. Participants evaluated two identical works of art by Andy Warhol. However, one print had direct physical contact with Warhol, while the other print did not. Participants then completed a series of items, which measured perceptions of authenticity and beliefs about the transfer of essence. We found evidence for a serial mediation model whereby participants who showed a greater need to belong, reported that the print that Warhol actually touched contained more of his essence, which in turn led to the perception that the touched print was more authentic and, hence, more valuable.

Study 4 tested whether directly manipulating belongingness would result in a similar increase in the valuation of authentic items. Using an established measure of social exclusion (Williams and Jarvis 2006), participants played a virtual ‘Cyberball’ game in which they were either excluded or included. Subsequently, they indicated how much they valued a series of positive contagion items. The results indicated that directly manipulating social rejection led to an increase in the need to belong, which in turn, enhanced the valuation of positive celebrity items.

Together, these results demonstrate that owning certain authentic objects can satiate a more fundamental need to belong. This research makes important contributions to the existing literature by forging new connections between research on authenticity and research on the centrality of social attachments. Moreover, these studies are (to our knowledge) the first empirical studies examine the motivations underlying consumers’ desire to acquire authentic goods (of any kind). In this respect, our paper builds new bridges to the CCT literature and researchers who have previously discussed links between feelings of social connection and authenticity (Beverland and Farrelly 2010).

For more information contact: [rosanna.smith@yale.edu](mailto:rosanna.smith@yale.edu)

### ***Motivated Memory Transaction: The Effects of Sharing Consumption Experiences with Others***

Li Huang, University of South Carolina, USA\*

Priyali Rajagopal, University of South Carolina, USA

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 social sharing can enhance memories through rehearsal, it may also facilitate forgetting by reliance on “Transactive Memory System (TMS)”, i.e. believing conversational partner(s) will remember it, thereby reducing the motivation to personally remember the experience (Wegner 1985). 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 (sharing: close friend vs. acquaintance) between-subjects study. 51 students read a shopping scenario, which was either relevant/ irrelevant to a student identity (Berger and Heath 2007) and recounted their experience to their best friend/new classmate. They then participated in several unrelated studies for 60 minutes prior to recalling their shopping experience.

An ANOVA revealed a significant interaction between social sharing and identity-relevance on experience recall ( $F(1,47)=17.5$ ,  $p<.001$ ). For identity-relevant experiences, consumers reported lower recall after sharing their experience with best friends as compared to classmates ( $M_{\text{best\_friend}}=1.83$ ,  $M_{\text{newclassmate}}= 5.00$ ;  $F(1,47) = 9.86$ ,  $p<.01$ ); results reversed for identity-irrelevant experiences ( $M_{\text{best\_friend}}= 4.11$ ,  $M_{\text{newclassmate}}=1.13$ ;  $F(1,47) = 7.78$ ,  $p<.01$ ). The results supported our contention that sharing identity-relevant experiences would result in memory decay when shared with close others.

Study 2 added another sharing condition- best friend with poor memory. Since we posit that the forgetting is due to belief in a safe collective-memory-system, it ought to be mitigated if the sharing partner is perceived to have poor memory (an unsecure repository). Additionally, we measured recall after a 48-hour delay. 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 procedures and dependent variable were similar to study 1.

An ANOVA revealed a significant interaction between identity-relevance and sharing partner on recall ( $F(2,87)=9.07, p<.001$ ). As predicted, for identity-relevant experiences, respondents recalled more of the experience in the new-classmate than the other two conditions ( $M_{\text{best\_friend}}=1.08, M_{\text{newclassmate}}=4.40, M_{\text{friendwithpoormemory}}=2.95; F(2,87)=4.67, p<.02$ ); for identity-irrelevant experiences, consumers recalled less in the new-classmate and best-friend-with-poor-memory conditions than best-friend condition ( $M_{\text{best\_friend}}= 3.18, M_{\text{newclassmate}}= 1.06, M_{\text{friendwithpoormemory}} =1.50; F(2,87) = 2.63, p<.08$ ).

Study 3 used a gender identity and non-student adults and added a condition wherein we informed respondents in advance that they would share their experience with a best friend. If we found no differences between the informed and non-informed conditions, it suggests a retrieval rather than encoding disadvantage. Further, if sharing activates TMS, eliminating sharing should hinder forgetting. 157 MTurkers participated in a 2 (identity relevant vs. control) x 3 (informed about sharing with best friend before encoding vs. not informed vs. no sharing) between-subjects study with corrected recall as our dependent variable.

We found a significant interaction of the two independent variables on recall ( $F(2,152) = 9.09, p<.001$ ). For identity relevant experience, informed-sharing and no-informed-sharing with best friend had no significant differences ( $p >.75$ ) but they were marginally significantly different from the no-sharing condition ( $M_{\text{knowing\_best\_friend}}=2.03, M_{\text{not\_knowing\_best\_friend}}=2.21, M_{\text{no\_sharing}}=3.22; F(2,152)=2.39, p<.10$ ). In the control conditions, the “informed sharing” and “no informed sharing” with best friend conditions did not differ, but they both reported better memory than no-sharing condition ( $p<.01, p<.02$ ).

Study 4 tested the sharing effects on differentially valenced memory. We predicted that only the memory people desire to recall would be transacted to TMS. Therefore, the forgetting of negative experience would be less likely. 209 MTurkers participated in a 2 (sharing partner (best friend vs. new neighbor) x 2 experience (identity relevant positive vs. identity relevant negative)) between-subjects study. They were randomly exposed to a positive vs. negative shopping experience relevant to their gender and then shared this experience with a best friend vs. a new neighbor. Recall was measured after 48 hours.

There was a significant interaction between valence and sharing partner ( $F(1, 205)=8.24, p < .01$ ) on recall. Sharing identity-related positive experience with best friend lead to memory decay compared to sharing it with a new neighbor ( $M_{\text{bestfriend}}= 2.06$  vs.  $M_{\text{newneighbor}} = 2.78; F(1, 205)=3.78, p < .06$ ), replicating study 1’s findings; for identity-related negative experience, sharing with best friend lead to memory enhancement ( $M_{\text{bestfriend}}=3.48$  vs.  $M_{\text{newneighbor}}=2.68; F(1, 205)=4.46, p<.04$ ), supporting our prediction that negative experience was less likely to be transacted and therefore not forgotten after sharing.

Study 5 used a different identity (nationality) along with a new experience (travel) and investigated whether non-human transactive partners (social media and digital camera) interfere with memory retrieval like human partners.

214 American MTurkers participated in a 2 (prime: nationality vs. none) x 3 (transactive partner: close friend, Facebook, camera) between subjects study. Respondents were primed (vs. no prime) with American identity and imagined traveling to Hong Kong. During travel, participants received a visitor guidebook containing coupons for 12 brands (6 American and 6 international brands). After the scenario, participants were provided photographs about their experience (e.g. Hong Kong tourist spots) and shared their experience with their best friend or on Facebook or imagining having taken these photographs with their digital camera. 48-hours later, we measured memories of the experience and coupon recognition.

An ANOVA revealed a significant interaction between sharing partner and identity-relevance ( $F(2, 209)=3.37, p <.04$ ). The simple effect of social sharing was significant ( $M_{\text{best\_friend}}=4.27, M_{\text{Facebook}}=5.75, M_{\text{digital\_camera}}=6.66; F(2,209)=4.62, p<.02$ ) in the identity-relevant but not control condition ( $p >.78$ ). For the identity-relevant experience, sharing on Facebook and taking photos with a



digital camera did not differ significantly ( $p > .2$ ). However, sharing the experience with a best friend showed poorer memory than when sharing on Facebook ( $p < .04$ ) or taking photos ( $p < .01$ ). When the experience was identity-irrelevant, there were no differences. A similar pattern of results was observed for coupon recognition.

Our research contributes to an understanding of when and why forgetting may occur after social sharing. It documents TMS as the underlying mechanism and social identity preservation as the driving motivation for memory transaction.

For more information contact: kaffeel@gmail.com

### ***Perceptual Difficulty Increases Indulgence***

Aekyoung Kim, Rutgers University, USA\*

Saerom Lee, University of Texas at San Antonio, USA

Imagine that Jennifer is browsing in a store to get some chocolates. She is trying to decide which bag of chocolates to select—the chocolates in the clear, transparent bag or the chocolates in the semi-clear, translucent bag. Which one will she be more likely to choose to purchase? Past research suggests that processing fluency increases consumers' liking of objects (Reber, Winkielman, and Schwarz 1998; Lee and Labroo 2004; Schwarz 2004). Thus, according to this view, Jennifer should be more likely to choose the chocolates in the transparent (vs. translucent) bag because she can perceive the chocolates with more clarity.

In the present work, we suggest that Jennifer will do the opposite and choose the chocolates in the translucent bag that she can perceive with less clarity. Why? Consumer preference for vices (i.e., unhealthier but more hedonic food items; Khan and Dhar 2006; Thomas, Desai, and Seenivasan 2011) (vs. virtues) is enhanced when relevant product stimuli are more difficult to process. This is because perceptual difficulty of the disfluent (vs. fluent) stimuli will lead consumers to focus more on pleasantly visualizing the consumption of the vice and distract them from thinking about the negative aspects (i.e., unhealthiness) of vices. This, in turn, will enhance the preference for vices (vs. virtues). This research adds to the literature examining the boundary conditions of the fluency effect (Lee and Labroo 2004; Labroo and Kim 2009; Pocheptsova, Labroo, and Dhar 2010; Shen, Jiang, and Adaval 2010) by proposing that product type (i.e., vices versus virtues) is an important moderator of the positive relationship between processing fluency of a product stimulus and liking of the product.

We conducted five studies to test the link between perceptual disfluency and indulgence in varied consumption settings.

In study 1 participants were presented with a restaurant menu that had two vices (ice-cream and chocolate cake) and two virtues (green tea and vegetable salad). In the disfluency (fluency) condition, the food items were written with a difficult-to-read (easy-to-read) font. Participants reported their intention to order each food item on a 7-point scale. Participants were more likely to order vices (vs. virtues), when the menu was presented with a difficult-to-read (vs. easy-to-read) font ( $p < .05$ ).

In study 2 participants were exposed to an advertisement for a product. In the vice (virtue) condition, a picture of chocolate cake (carrot cake) with text regarding its hedonic (health) benefits, was presented in the ad. In the fluency (disfluency) condition, the ad was visually easy-to-process (difficult-to-process). Participants reported higher consumption intention for the chocolate cake (vs. carrot cake) when the ad was difficult-to-process ( $p < .005$ ), suggesting again the link between disfluency and indulgence.

Study 3 sought to explore the underlying process of the effect through pleasure of visualizing the food. Participants examined an ad for either a vice (caramel pudding) or a virtue (pumpkin pudding). The picture of pudding was controlled to be identical. The ad was either visually easy-to-process or difficult-to-process. Participants reported higher consumption intention for the caramel pudding (vs. pumpkin pudding) when the ad was difficult-to-process ( $p=.02$ ). In contrast, participants' intention to consume caramel pudding and pumpkin pudding did not differ when the ad was easy-to-process ( $p>.50$ ). Indirect effect through pleasure of visualizing was significant in the disfluency condition (CIs: .26 to 2.38) but not in the fluency condition (CIs: -1.05 to .79), suggesting that pleasure of visualizing the vice underlies the effect of disfluency on preference for vices.

Study 4 strengthened the proposed underlying process by directly manipulating visualization of a vice product. In the visualization condition, participants were instructed to visualize the product when examining an ad, whereas in the control condition, there was no instruction regarding the visualization. After visualization (vs. control) manipulation, participants saw an ad for chocolate cake that was either easy-to-process or difficult-to-process. We expected that visualization would increase preference for the chocolate cake even when the ad was easy-to-process. As expected, visualization manipulation increased intention to consume the chocolate cake when the ad was easy-to-process ( $p=.01$ ). In contrast, visualization had no effect on intention to consume chocolate cake when the ad was difficult-to-process ( $p>.73$ ). Indirect effect through pleasure of visualizing was significant in the fluency condition (CIs: .002 to 1.10) but not in the disfluency condition (CIs: -.85 to .43).

Study 5 tested the effect of perceptual fluency on consumers' real product choice behavior. We also extended our findings using a different manipulation of (dis)fluency. (Dis)fluency was manipulated through different product packages. Specifically, in the fluency (disfluency) condition, participants were presented with five bags of jelly beans in transparent (translucent) plastic bags. Jelly beans were described as either a vice (sugar candy) or a virtue (fruit jelly). Participants reported higher consumption intention for the sugar candy (vs. fruit jelly) when the package was translucent ( $p=.01$ ). In contrast, participants' intention to consume sugar candy and fruit jelly did not differ when the package was transparent ( $p>.23$ ). Study 5 also replicated the underlying process of the effect through pleasure of visualizing the vice. Indirect effect was significant in the disfluency condition (CIs: .01 to .48) but not in the fluency condition (CIs: -.19 to .15).

Together, these findings demonstrate that indulgent choice is enhanced when the product stimuli are more difficult to process because more pleasant visualization about consuming vices is triggered by perceptual difficulty. This research contributes to the literature on processing fluency and self-control by revealing the important, but currently uncharted, positive effect of processing difficulty in hedonic food consumption. Our findings also provide implications for marketers by demonstrating a unique role of processing difficulty in indulgent choices.

For more information contact: [aekyoung.kim@rutgers.edu](mailto:aekyoung.kim@rutgers.edu)

***Pleasure as an Ally of Healthy Eating? Contrasting Visceral and Epicurean Eating Pleasure and their Association with Portion Size Preferences and Wellbeing***

Yann Cornil, University of British Columbia, Canada\*

Pierre Chandon, INSEAD, France

Research on food and eating has overwhelmingly associated pleasure with impulsive visceral drives (Dube and Le Bel 2003). Visceral eating occurs because external cues, such as the mere sight, smell or taste of a pleasant food, activate the pleasure centers of the brain (Berridge 2009; Plassmann, O'Doherty, and Rangel 2010). Emotions can also trigger visceral eating urges, as people seek pleasurable

foods as a way of regulating negative emotions (for a review, Macht 2008). This view highlights the negative characteristics of eating pleasure, leading to immoderation (van Strien et al. 1986) and food anxiety (Coveney 2000). It also echoes a long tradition in philosophy of considering gustatory pleasure as animal and uncontrolled (i.e., visceral), pursued by “brutes” (Korsmeyer 1999).

We contrast this view of pleasure with an “Epicurean” perspective, which recognizes that the sense of taste in particular, and the pleasure of eating in general, can be controlled by volition, educated and refined (Kass 1994). We define Epicurean eating pleasure as the pleasure derived from the multisensory, aesthetic and symbolic aspects of food. These facets of eating pleasure have received little attention in consumer behavior research, partly because of the difficulty of capturing them via traditional experimental paradigms (Alba and Williams 2013). Yet, recent studies have started to show how these Epicurean facets contribute to pleasure, for instance, by improving food presentation (Hoyer and Stokburger-Sauer 2012), providing rich multisensory information (Elder and Krishna 2010), giving meaning to food (Wansink, Payne, and North 2007), “ritualizing” the experience of eating (Vohs et al. 2013), or simply, paying more attention to senses while eating (Quoidbach and Dunn 2013).

In the current research, we aim to develop and test a scale measuring Epicurean eating pleasure tendencies, show how it differs from visceral eating pleasure tendencies (measured with External eating and Emotion eating tendencies), and more importantly, that Epicurean pleasure can be associated with moderation (e.g. preference for smaller portions) and a sense of higher well-being. Indeed, psychological wellbeing depends on our ability to “savor” pleasurable experiences, rather than accumulating pleasurable experiences (Quoidbach et al. 2010). In line with this argument, cross-cultural studies point at the fact that portion sizes and obesity rates are both lower in cultures with a strong focus on aesthetic and experiential food pleasures, like France and Japan (e.g. Rozin 2005).

First, we developed two new instruments: one designed to assess Epicurean eating pleasure tendencies, and the other to assess Preferences for larger food portions. The 29 original Epicurean items reflected the multisensory, aesthetic and symbolic facets of eating pleasure (e.g. “I value the look, the smell, the taste, the texture in mouth of foods”, “There is a lot of beauty in food”), and the 25 original Portion size items measured preferences for larger food portions (e.g. “One regular serving of food never seems to be enough to satisfy me”). We presented the pool of items to seven judges to assess face validity and then examined the item reliability in a pre-study involving 265 adult Americans on an online marketplace (Amazon Mechanical Turk). We analyzed the results using exploratory factor analyses and finally obtained a seven-item Epicurean tendencies scale and a 6-item Preference for larger portions scale.

For the main study, we recruited 250 adult Americans on Amazon Mechanical Turk. We started the study with the two new scales measuring Epicurean eating and Preferences for larger portions. We then administered the complete Dutch Eating Behavior Questionnaire (DEBQ, van Strien et al. 1986), which contains the 10-item External Eating scale (measuring visceral responsiveness to external food cues), the 13-item Emotional Eating scale (measuring visceral eating in response to negative emotions), and the 10-item Restrained Eating scale (measuring dieting tendencies). We also measured health worries with a 3-item scale developed by Rozin et al. (1999), and psychological wellbeing with the 8-item short version of the Oxford Happiness Questionnaire (Hills and Argyle 2002). Finally, we asked the participants to indicate their age, gender, income, highest diploma, and weight and height (to compute their body mass index).

The Epicurean Eating scale and the Preference for larger portions scale had satisfactory Cronbach’s alphas (respectively .86 and .75). Confirmatory factor analysis with the Epicurean Eating scale, the External Eating Scale, and the Emotional Eating scale showed that Epicurean eating tendencies were clearly distinct from visceral eating tendencies. Gender was the only demographic variable significantly associated with Epicurean eating tendencies scale, with women scoring higher than men ( $p < .04$ ). Epicurean eating tendencies were equally distributed across age, income, education, and BMI levels. In contrast, external and emotional eating increased with BMI and were strongly influenced by income.

We then estimated a structural equation model with seven latent variables using AMOS 19.0 (Arbuckle 2010) in order to compare the associations between the different scales. As expected, Preferences for larger portions were negatively correlated with Epicurean eating tendencies ( $c=-.14$ ,  $p=.03$ ) and positively correlated with external eating and emotional eating (resp.  $c=.21$ ,  $p<.001$ ,  $c=.15$ ,  $p=.02$ ). The expected contrast between Epicurean and visceral eating tendencies was also found when looking at wellbeing, which was positively correlated with Epicurean eating tendencies ( $c=.19$ ,  $p<.01$ ) but negatively correlated with both external and emotional eating (resp.  $c=-.18$ ,  $p<.01$ ;  $c=-.35$ ,  $p<.001$ ). Importantly, Epicurean eating tendencies were clearly distinct from dieting tendencies ( $c=.06$ ,  $p=.31$ ), which were associated with lower well-being ( $c=-.14$ ,  $p=.02$ ).

In conclusion, our research underlines the pitfalls of the moralization of food pleasure in research, which has tended to perceive eating pleasure as a “vice”, a “sin of gluttony” that needs to be tamed (Askegaard et al. 2014). We believe that this dominant visceral perspective on eating pleasure, which highlights its uncontrolled and negative characteristics, should be complemented by an Epicurean perspective. The Epicurean perspective invites us to challenge the morality of food pleasure, suggesting that pleasure may in fact facilitate moderation and well-being, and calls for research to give a more holistic and positive role to taking pleasure in food (Block et al. 2011).

For more information contact: pierre.chandon@insead.edu

## ***Individual Papers: Better Living through Psychology***

### ***Banking Happiness***

Ali Faraji-Rad, Nanyang Technological University, Singapore\*

Leonard Lee, National University of Singapore, Singapore

People regulate their emotions (Gross, 2013): They decide or behave in ways that help them achieve desired emotional states. Affect regulation takes many forms, one being mood management. People generally want to maintain a positive hedonic state; consequently, after experiencing negative feelings, they choose to expose themselves to more positive stimuli in order to attain more positive feelings (Zillmann & Bryant, 1985; Zillmann, 1988). A characteristic of such mood management is that it is reactive: people regulate their feelings after experiencing negative feelings. Nonetheless, affect-regulation strategies may not always be reactive. People also sometimes pursue more proactive and future-oriented strategies.

In this research, we aim to document such a proactive form of affect regulation—a phenomenon that we call banking happiness. We propose that by merely anticipating a future sad event, people are more likely to choose to expose themselves to positive stimuli. This choice is consistent with an attempt to accumulate (i.e., bank) happiness in order to enhance one’s ability to face the anticipated sadness—as if happiness were a resource that can be accumulated and consumed later when needed. Building on a large body of evidence that shows that people’s implicit lay theories have meaningful consequences for their choices and behavior (Molden & Dweck, 2006; Hong, Levy, & Chiu, 2001), we argue that people bank happiness because of their lay theory that happiness is a resource that can be accumulated (i.e., bankable).

In Experiment 1 we told 183 undergraduate students that they would have to participate in two “unrelated” surveys. At the beginning of the session, ostensibly in compliance with the requirements of the “Institutional Review Board,” participants in the anticipated-sadness condition were told that the “second survey” would make them sad, whereas participants in the control condition were told that the “second survey” would not change their emotional state. In the “first survey,” all participants saw the titles of two songs and had to

choose one to listen to: “Laughs and Swing” and “A Rainy Day” (stimuli adopted from Cohen & Andrade, 2004). As predicted, compared to participants in the control condition (32%), a greater proportion of participants in the anticipated-sadness condition (47%) chose the happy song ( $\chi^2 = 3.98, p < .05$ ). Experiment 2 conceptually replicated the results of Experiment 1 by manipulating participants’ expectations of how they would feel on the day after the experiment because of the forecasted weather.

Experiment 3 replicated the results of Experiments 1 and 2 while assessing the role of lay theories in this phenomenon. We asked 159 MTurk participants to imagine that they were medical doctors and that they were driving to a hospital. We told participants in the anticipated-sadness condition that at the hospital they would visit a young patient who had been diagnosed with cancer. However, we did not provide participants in the control condition any information about the patient. Participants indicated which of the two songs as in Experiment 1 they would prefer to listen to during the ride to the hospital. Finally, we measured participants’ lay theories about whether happiness is a resource that can be accumulated; participants indicated their agreement (on five-point scales) with four sentences such as “How good I feel now will determine my ability to deal with sadness in the future” and “Happiness is a resource that I can accumulate.” Again, documenting the banking happiness phenomenon, participants were more likely to choose the happy song if they anticipated becoming sad after visiting their patient ( $\beta = 0.36, \text{Wald } \chi^2 = 3.94, p < .05$ ). Moreover, participants who believed that happiness is an “accumulable” resource were more likely to exhibit the banking-happiness phenomenon ( $\beta = 0.46, \text{Wald } \chi^2 = 3.91, p < .05$ ).

Experiment 4 aimed to provide further evidence for the anticipatory nature of banking happiness while dissociating the phenomenon from reactive mood management. A total of 256 MTurk participants made a choice between the two songs as in Experiments 1 and 3. Before choosing the song, however, using a method similar to Experiment 1, participants in the anticipated-sadness condition were made to believe that they would feel sad. In contrast, participants in the experienced-sadness condition were in fact made to feel sad before choosing the song (by watching a sad video). Participants’ lay theories about whether happiness is a resource that can be banked and their future (vs. present) temporal orientation were also measured (Shipp, Edwards, & Lambert, 2009).

A logistic regression predicting song choice using condition, lay-belief strength, and their interaction, produced a significant interaction between lay-belief strength and condition ( $\beta = 0.22, SE = .10, \text{Wald } \chi^2 (1) = 4.37, p = .036$ ). Participants who anticipated sadness, were more likely to choose the happy song the more strongly they believed that happiness is bankable, but lay-belief strength did not predict song choice among those who actually experienced sadness.

A similar logistic regression that replaced lay-belief strength with relative future (vs. present) orientation revealed an interaction between the condition and relative future-orientation ( $\beta = 0.08, SE = .03, \text{Wald } \chi^2 (1) = 9.66, p = .002$ ). Participants who anticipated feeling sad were more likely to choose the happy song the more future-focused (vs. present-focused) they were ( $\beta = 0.07, SE = .04, \text{Wald } \chi^2 (1) = 3.75, p = .053$ ), whereas participants who actually experienced sadness were more likely to choose the happy song the more present-focused (vs. future-focused) they were ( $\beta = -0.09, SE = .04, \text{Wald } \chi^2 (1) = 4.23, p = .040$ ).

Together, our results provide support for the banking-happiness phenomenon while dissociating it from reactive forms of mood management documented in the prior literature.

For more information contact: [afaraji-rad@ntu.edu.sg](mailto:afaraji-rad@ntu.edu.sg)

## *The Janus Face of Ideal Self-Congruence: Self-Enhancement versus Emotional Distress*

Daniela Herzog, University of Bern, Switzerland\*

Lucia Malär, University of Bern, Switzerland\*

Harley Krohmer, University of Bern, Switzerland

Wayne Hoyer, University of Texas at Austin, USA

Consumer researchers and marketing managers are both interested in the concept of aspirational branding, where consumers' dreams and ideal self-concepts rather than their realities are targeted (e.g., Shepherd, Chartrand, and Fitzsimons 2015). An important construct in this context is ideal self-congruence – a brand is perceived as ideally self-congruent, if its brand personality is similar to the consumer's ideal self (Sirgy, 1982). Most research has focused on the positive effects of ideal self-congruence as it appears to be a driving force behind a positive evaluation of a brand. One study, however, provided preliminary evidence that aspirational branding may not always work (Malär et al. 2011). Similarly, in an interpersonal context, Herbst, Gaertner, and Insko (2003) have shown that a relationship partner's similarity to the ideal self simultaneously not only generates attraction, but also leads to repulsion. These insights suggest a coexistence of both positive and negative simultaneous effects of ideal self-congruence on consumers.

A key question therefore is how to explain these 'Janus face' effects. On the positive side, an aspirational brand can support consumers in their self-enhancement activities by giving them the feeling of getting closer to their ideal self (Sirgy, 1982). On the negative side, consumers may negatively perceive any gap between their own reality and a brand with an idealistic brand personality that personifies their aspirations (Richins, 1991). Thus, an aspirational brand involves an upward comparison in which a consumer realizes that the brand possesses or accomplishes something that he or she does not (yet) have, which may elicit negative emotions. One of the underlying mechanisms that could explain such a negative effect of ideal self-congruence is brand envy. Envy results from an upward social comparison to a superior other (Tesser & Collins, 1988) and can be considered to be among the most fundamental factors influencing consumption processes and outcomes (Belk, 2011). Nevertheless, despite the strong link between communicated ideals and envy, to the best of our knowledge, the role of brand envy in aspirational branding has yet to be examined.

Against this background, we report four studies that shed light on how, why, and when ideal self-congruence affects consumers. Study 1 shows that it leads both to positive consumer reactions (by increasing attitude towards the brand through anticipated self-enhancement feelings) and negative consumer reactions (by increasing negative self-conscious emotions through brand envy). Study 2 shows that it only leads to negative self-conscious emotions through envy when the brand represents agentic values (versus communal values) and among consumers with a high self-discrepancy (i.e., gap between their actual and ideal self; Study 3). Finally, we show that ideal self-congruence leads to benign brand envy but not malicious brand envy (Study 4).

In Study 1, 138 participants completed an online study in which we used a description of a fictitious aspirational brand and measured ideal self-congruence (Malär et al., 2011). We show that ideal self-congruence leads to a positive attitude towards the brand mediated by anticipated self-enhancement feelings but also to negative self-conscious emotions by eliciting envy.

These effects, however, might not hold for every type of brand. In Study 2, 226 participants from a consumer panel participated in an online experiment with a 2 (i.e., agentic vs. communal brand perception) between-participants factorial design. Participants were exposed to an existing fashion brand either described with agentic words (e.g., assertive and self-confident) or with communal words (e.g., polite and considerate) (Abele & Bruckmüller, 2011). Probing the moderated mediation through a spotlight analysis revealed a significant indirect effect of ideal self-congruence on attitude towards the brand through anticipated self-enhancement for both agentic and communal brands, however the effect was stronger for agentic brands. It further revealed a significant indirect effect of ideal self-congruence on negative self-conscious emotions through envy only for agentic brands but not for communal brands. Thus, only

when a brand represents agentic (and not communal) values, ideal self-congruence elicits envy which results in negative self-conscious emotions.

In Study 3, we further explore a boundary condition of the negative effect: we examine the moderating role of self-discrepancy on the effect of ideal self-congruence on negative self-conscious emotions through envy by measuring self-discrepancy (Pelham & Swann, 1989) two weeks later. We manipulated ideal self-congruence by making participants (N = 126 students) describe a brand that is congruent (condition 1) versus not congruent with their ideal self (condition 2). The results show a significant interaction between ideal self-congruence and self-discrepancy on brand envy. Ideal self-congruence leads to negative self-conscious emotions through brand envy among consumers with a moderate or large self-discrepancy (i.e., rather far away from their ideal self), but not among consumers with a small self-discrepancy (i.e., have already attained their ideal self).

Previous research has examined different types of envy: benign and malicious envy (Van de Ven, Zeelenberg, & Pieters, 2011). In Study 4, we attempt to gain more insights on the type of envy that is elicited by an ideally self-congruent brand. 88 students participated in a lab experiment. We find that ideal self-congruence only leads to benign brand envy which results in negative self-conscious emotions, but not to malicious brand envy.

We contribute to the literature by providing a deeper understanding of the diverse effects of ideal self-congruence. We provide conceptual and empirical support for both the positive and negative effects of ideal self-congruence and a deeper understanding of the negative side by introducing the concept of brand envy. Brand envy plays a key mediating role in the relationship between ideal self-congruence and negative self-conscious emotions. By examining both the types of ideals a brand represents and consumer characteristics, we generate knowledge about who is vulnerable to which ideals used in brand positioning and why. This enables us to better understand the true effects of aspirational branding on consumer well-being.

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

### ***Do Dieters Regret Unhealthy Consumption? The Effect of Behavioral Regulation Goals on Consumption Regret***

HaeEun Helen Chun, Cornell University, USA\*

Manoj Thomas, Cornell University, USA

A growing body of recent research examines the paradoxical effects of forming behavioral regulation goals on consumers' judgments and decisions. We extend this stream of research by examining an unexplored question: how does behavioral regulation influence consumers' regret about their unhealthy behaviors? Examining regret in this context is important because regret is a necessary condition for behavior regulation and remediation, helping us avoid undesirable future behavior (Bell, 1982; Landman, 1993).

At first blush, it seems that behavioral regulation goals would, or at least should, increase consumption regret. A dieter who is trying to reduce consumption of calorie rich desserts is likely to feel more regretful after devouring a decadent chocolate cake, relative to someone who does not have a diet goal. However, in this research we suggest that this lay belief might be misplaced. We propose that behavioral regulation goals will create a discrepancy between anticipated and experienced regret such that these goals will increase anticipated regret but its effect on experienced regret will be weaker. But why is it that behavioral regulation goals influence only anticipated regret, but not experienced regret? A key difference is that anticipated regret, although it is a negative feeling, is not a threat to one's self-image because the regrettable action has not yet been committed. But because of foregone opportunities to correct the behavior, the negative

feeling experienced after a self-control failure threatens one's self-image. This propels people to engage in psychological repair work to attenuate the intensity of regret (Gilbert et al., 1998; Gilovich & Medvec, 1995).

How might then people lessen defensiveness and acknowledge their intense regret after a self-control failure? We argue that if regret regulation is caused by defensiveness about one's self-image, then affirming her/his self-image in an unrelated domain (Harris & Napier, 2005; Reed & Aspinwall, 1998) should reduce the defensive regulation of experienced regret. For example, when consumers with a diet goal are self-affirmed, they should be more willing to acknowledge that their past unhealthy consumption was regrettable, and thus the psychological immune system is less likely to attenuate their experienced regret.

We test these ideas in two field studies and one scenario study. In study 1 (N=71), smokers who just finished smoking were approached on a university campus. Half of the smokers indicated how much regret they feel now after smoking, whereas the other half indicated how much regret they will feel next time they smoke (on a 7-point scale). All respondents indicated the extent to which they intend to quit smoking (on a 7-point scale). When reported regret was regressed on anticipation vs. experience focus, mean-centered intention to quit smoking, and their interaction, we observed a marginally significant interaction such that having a behavioral regulation goal increased defensive regulation of experienced regret; smokers who were trying to quit smoking anticipated more intense regret than those who had no intention to quit smoking, but after smoking the experienced regret diminished and was similar to that of smokers who had no intention to quit smoking.

In Study 2 (N=352), we replicate these findings at a restaurant. Patrons were approached either before or after consuming desserts and asked about how much regret they will feel about eating desserts or how much regret they feel now after having eaten desserts. Participants also reported on their diet status (yes, no). A 2 (anticipation vs. experience focus) x 2 (behavior regulation goal: dieters vs. non-dieters) ANOVA on regret revealed an interaction such that defensive regulation of experienced regret occurred only among dieters. Dieters who planned to eat dessert anticipated more intense regret than non-dieters, but after consuming the desserts their regret diminished and was similar to that of non-dieters.

Study 3 (N=161) further tests the robustness of the results in a more controlled setting and taps into the mechanism underlying the defensive regulation of regret. This study used a 2 (anticipation vs. experience focus) x 2 (self-affirmed vs. disaffirmed) between-subjects design and measured the strength of a diet goal. All participants first completed the self-affirmation (disaffirmation) task, writing about one value that was most (least) important to them. Half of participants were then asked to consider eating a slice of cheesecake now and report how much they will regret the consumption. Subsequently, they reported regret about eating one doughnut and one serving of soda, one item at a time. The other half responded to experienced regret based on their past consumption of the same food items. All participants indicated the extent to which they control their diet. The main finding is that self-affirmation reduced the defensiveness of participants with a strong diet goal—experienced regret was as intense as anticipated regret. When those who are high on a diet goal were disaffirmed, experienced regret was less intense than anticipated regret, replicating the previous results.

In sum, we document that behavioral regulation increases anticipated regret but has little impact on experienced regret. Our results suggest that people's tendency to defensively reduce experienced regret may be responsible for a vicious cycle that perpetuates unhealthy behaviors. People believe they will feel bad if they consume unhealthy food, but actually they do not feel so bad after the consumption. So if people fail to anticipate regret before consumption, then after consumption even if they consider regret they might not experience any regret.

This research also points to a possibility that the role of anticipated regret may be extended as a more effective intervention device in discouraging unhealthy behavior. Regret is more likely to lead to behavioral remediation when people are encouraged to anticipate regret before consumption because unregulated anticipated regret is more intense. For example, to curb smoking habits, an advertisement can



invoke anticipated regret from future events (“think of the next time you will smoke and how that will affect your lungs”), or it can invoke experienced regret from past smoking incidents (“think of the last time you smoked and how that affected your lungs”). Our results suggest that the former that invokes anticipated regret is likely to be more effective.

For more information contact: hc633@cornell.edu

### ***Impatient to Achieve or Impatient to Receive: How the Goal Gradient Effect Underlies Time Discounting***

Oleg Urminsky, University of Chicago, USA\*

Indranil Goswami, University of Chicago, USA

Research on both the goal gradient (Kivetz et al 2006) and intertemporal choice and discount rates (Frederick et al 2002, Zauberman and Urminsky 2015) has shown that outcomes are more valued when they are closer in time. While intertemporal choices have been linked to goal conflict (Urminsky and Kivetz 2011), the goal gradient and time discounting have generally either been studied separately or integrated by assuming that goal gradient effects are due to time discounting (Jain 2012). In this paper, we separate what is usually confounded in goal gradient and intertemporal choices research, the timing of achieving task completion and the timing of receiving the associated outcome. This approach allows us to separate the effects of the goal gradient (distance to completing the task needed to earn a reward) from the effects of intertemporal preferences (time until actually receiving the reward). Across eight studies, we find that choices involving tradeoffs between smaller soon and later larger goals, holding reward timing constant, parallel time discounting findings, but are not explained by the time discounting of received benefits.

In the first study (N=406), participants allocated non-substitutable resources between two hypothetical projects (10 hours of access to research resources needed for two papers). Across four between-subjects conditions, we varied when the papers were due (i.e., the goal timing: the first in three weeks and the second in three or five weeks) and when the papers would be graded (i.e., the temporally discounted outcome: both in three weeks, one in three weeks and one in five weeks, or both in five weeks). Allocations were significantly higher for the first project when the first deadline was sooner ( $\beta = .11, p = .002$ ), consistent with the goal gradient, but the timing of the outcome did not have a significant effect (receiving the grade,  $\beta = .038, p = .283$ ), suggesting minimal time discounting in this context. These results were replicated in two similar studies.

In Study 2a (N=380), participants allocated 10 tickets between two hypothetical lotteries with equal probabilities of winning: Lottery A, which paid \$10, or Lottery B, which paid \$14. Participants would find out whether they won in either 1, 3 or 5 weeks, and winners would receive the prize in either 1, 3 or 5 weeks, yielding nine between-subjects conditions. Thus, the two lotteries could differ in the timing of the drawing (or not) and in the timing of the payment (or not). This design allowed us to separately quantify the effect of goal completion timing (goal gradient) and prize receipt timing (time discounting), in a regression analysis predicting allocation between the two lotteries based on the differences in timing.

Participants generally split their tickets, allocating 5.7 vs. 4.3 tickets to Lotteries A vs. B, averaging across the conditions. However, for each additional week that Lottery B’s drawing occurred later than Lottery A’s drawing, participants allocated .26 fewer tickets to Lottery B ( $p = .001$ ), controlling for the timing of the payoffs. In contrast, for each additional week that Lottery B’s payoff was later than Lottery A’s payoff, participants only allocated .15 fewer tickets to Lottery B ( $p = .04$ ), controlling for the timing of the drawings. Thus, we found significantly stronger goal gradient effects than time discounting effects. Estimating a traditional time discounting model (which ignores the timing of goal outcomes) for the data, yielded an overly impatient estimate of the weekly time discounting factor (.89 instead

of .95). Study 2b (N=379) replicated these findings, using the same nine lottery scenarios but eliciting binary choices rather than allocations.

In Study 3 (N=171), participants read a scenario about choosing between plane tickets and thereby earning points in one of two different frequent flyer programs. We elicited their indifference point, via a series of choices, between one program in which they earned fewer points but also needed fewer points to earn a reward and another program in which they earned more points but had a higher points requirement to earn the same reward. We found that the way people made tradeoffs involving the timing of outcome resolution (e.g., completing the requirement for a free ticket) paralleled prior findings of hyperbolic time discounting, even when the timing of receiving the reward benefit was fixed. For example, earning 500 points in the first program was equivalent to earning more points in the second program when it was the last 500 needed than when it was 500 out of 1000 ( $p < .01$ ), even if the free flight would have been used at the same time in either case.

Lastly, in Study 4, participants (N=72) allocated tickets between two real lotteries, which differed by a week in the timing of the drawing, but both paid a \$50 prize at the same time. Participants varied in how far in the future the sooner drawing would be held (from 11 days away to 1 day away). Because both lotteries paid the prize at the same time, a time discounting account would predict no difference between the two lotteries. In contrast, the closer the drawings were when the participants made their choice, the more tickets they allocated to the lottery with the sooner drawing ( $r = -.29$ ,  $p = .01$ ), a goal gradient finding that parallels, but cannot be explained by, hyperbolic discounting.

In summary, in those situations where people learn about earning a reward at one time but actually receive the reward at another later time, we observe separate disassociated larger goal gradient and smaller time discounting effects. While time discounting may explain some goal gradient findings, our studies primarily find that goal gradient effects provide a substantial explanation of time discounting. Estimated discount rates are inflated when not separately accounting for goal gradient effects.

For more information contact: oleg.urminsky@chicagobooth.edu

## ***Individual Papers: In limbo: Influencing performance and decisions***

### ***Social Exclusion and Reliance on Feelings versus Reasons in Persuasion***

Fang-Chi Lu, Korea University, Korea\*

Jayati Sinha, Florida International University, USA\*

Social exclusion is common in both face-to-face and online interactions. Given that the need to belong is a fundamental human motivation closely tied to physical and psychological wellbeing (Baumeister & Leary, 1995), how people respond to social exclusion, representing a powerful and aversive threat to one's welfare, has been an important research question.

Past research suggests that people who are deprived of close social ties experience more negative physical and psychological consequences (Cacioppo et al., 2003). Furthermore, socially rejected people behave differently from those who experience social acceptance or a neutral experience (Baumeister et al., 2007). Ironically, after being socially excluded, people often react in anti-social and self-defeating ways (Twenge et al., 2001; Twenge et al., 2002), which further hinder their social interactions and future opportunities of re-acceptance. Moreover, socially excluded people are less willing to spend mental resources on thinking and on self-regulation (Baumeister et al., 2005; Baumeister et al., 2002). Recent research suggests that social exclusion depletes cognitive and self-regulatory

resources, thus socially excluded people become careful about conserving the limited mental resources for future chances of social reconnection (resource-conservation account; Cheung & Gardner, 2015; Muraven et al., 2006). Indeed, when excluded people anticipate opportunities of social reconnection, they are motivated to respond pro-socially (Maner et al., 2007), perform better at self-regulation (DeWall et al., 2008), and tailor their attitudes and preferences for products that enhance social affiliation (Mead et al., 2011; Wang et al., 2012). Taken together, extant research demonstrates that socially excluded people can self-regulate and act pro-socially when the acts are linked to possible future acceptance.

The current research investigates how socially excluded people can be persuaded to act more prosocially and in less self-defeating ways from a different perspective. Specifically, building on prior works that social exclusion impairs cognitive thinking (Baumeister et al., 2002) and that people rely more on their feelings in making a choice when mental resources are limited (Shiv & Fedorikhin, 1999), we propose that socially excluded people will rely more on feelings (vs. reasons) in making decisions. Given that consumers may follow affective versus cognitive path to persuasion depending on situational influences (Pham & Avnet, 2004), we further posit that excluded people will be persuaded better by using feeling-based (vs. reason-based) persuasive messages.

### Study 1

Participants were asked to write about a personal experience of social rejection (vs. social acceptance or a neutral experience; Dommer et al., 2013). Participants then indicated their relative preference between two laptop computers: one was superior on affective dimensions (e.g., design) and the other was superior on cognitive dimensions (e.g., warranty) (Hong & Chang, 2015). ANOVA analyses revealed significant variation among the three experimental conditions ( $F(1, 87)=3.77, p=.027$ ): excluded participants ( $M=5.33$ ) reported greater relative preference for the affectively superior option than those in the included ( $M=6.27$ ) and control conditions ( $M=6.24$ ).

### Study 2

Research has suggested that consumers relying on feelings in assessing product value are less likely to take into account quantitative information, such as magnitude or scope of the product (Hsee & Rottenstreich, 2004). If excluded people rely more on feelings in decision, they should show greater tendency for scope insensitivity. Accordingly, Study 2 was designed to examine this proposition. Participants wrote about a personal experience of social rejection (vs. acceptance) as Study 1. Then they were asked to imagine that their friend was selling either a bundle of 5 CDs or 10 CDs and indicated their intention to purchase the bundle. ANOVA analyses revealed a significant two-way interaction ( $F(1, 118)=4.52, p=.036$ )—included participants reported significantly higher purchase intention for the 10-CD set than for the 5-CD set ( $M_{10CD}=4.17$  vs.  $M_{5CD}=2.89$ ), while excluded participants were insensitive to the number of CDs ( $M_{10CD}=3.73$  vs.  $M_{5CD}=3.94$ ).

### Study 3

Study 3 was designed to provide evidence for the underlying mechanism and examine the proposed social exclusion effect in persuasion context. Participants first completed a social exclusion manipulation (Maner et al., 2007). They then indicated their relative preference between feeling-based and reason-based blood donation ads. Finally, participants were asked to solve a set of four anagrams (the last two were unsolvable) (Agrawal & Wan, 2009) and persistence in this anagram task served as a measure of self-regulatory resource availability. The results showed that excluded participants reported a significantly higher preference toward the feeling-based ad ( $M_{\text{exclusion}}=4.21$  vs.  $M_{\text{inclusion}}=3.05$ ;  $F(1, 75)=9.03, p=.004$ ), and spent significantly less time (in minutes) solving the anagrams ( $M_{\text{exclusion}}=7.82$  vs.  $M_{\text{inclusion}}=9.95$ ;  $F(1, 75)=6.75, p<.01$ ). Furthermore, self-regulatory resource depletion mediated the social exclusion effect on ad preference ( $\beta = .27$ ;  $SE = .17, CI (95\%) = .03, .69$ ).

## Study 4

Study 4 was a 2 (social exclusion)×2 (self-regulatory depletion)×2 (mindset) between-participants design. First, social exclusion was manipulated by using personality assessment feedback predicting a lonely (vs. belonging) future (Twenge et al., 2001). Second, self-regulatory resource was manipulated by asking participants to cross off all instances of the letter e on a typewritten paper, following either multiple rules (depletion condition) or no rules (no-depletion condition) (Baumeister et al., 1998). Finally, participants were presented with a “mock-up” soda beverage ad and were instructed to pay attention to their feelings/emotions (vs. reasons/thoughts) while responding to the ad. Then they reported their purchase likelihood of the soda beverage. ANOVA analyses revealed a significant three-way interaction ( $F(1,171)=11.46, p<.001$ ). In no-depletion condition, purchase likelihood was higher when socially excluded participants paid attention to feelings/emotions (vs. reasons/thoughts) and included participants paid attention to reasons/thoughts (vs. feelings/emotions). Contrarily, in depletion condition included participants behaved like excluded participants—purchase likelihood increased as they paid attention to their feelings/emotions (vs. thoughts/reasons). Study 4 provided converging evidence that excluded people are more inclined for feeling-based processing due to depleted self-regulatory resources.

In conclusion, we contribute to the social exclusion literature by examining and demonstrating that social exclusion leads to more reliance on affective (vs. cognitive) mode of information processing. Furthermore, we shed light on identifying an alternative way to communicate with excluded people and to better persuade them to act in a positive, pro-social manner that contributes to the enhancement of social relationships and personal wellbeing.

For more information contact: fanglu@korea.ac.kr

### ***Time Units and Patience***

Rafay Siddiqui, University of South Carolina, USA\*

Ashwani Monga, Rutgers University, USA

Eva Buechel, University of South Carolina, USA

Consumers often face a choice between a smaller sooner reward (SS) versus a larger later one (LL). For instance, a consumer could purchase the currently available version of an iPad (SS) or wait for the newer version that is better, but available later in time (LL). In such intertemporal choices, the LL option reflects greater patience. We show that when wait time is expressed using larger units (e.g., 3 months instead of 90 days), people become more patient, but only when the rewards are hedonic in nature, not when they are utilitarian. This happens because, when rewards are hedonic, people are more likely to fall prey to the numerosity heuristic. Specifically, because larger units of time are associated with smaller numbers, the smaller numbers cue a shorter wait time and make people more patient for the LL option.

### **Theoretical Development**

In intertemporal choices, patience is known to be affected by the nature of the rewards (Thaler 1981) and also by the perception of wait time (Zauberman et al. 2009). In the present research, we demonstrate an interactive effect of rewards and wait time. Specifically, the units used to describe wait time (e.g., days vs. months) influence the perception of wait time, and consequently patience. However, this is contingent on whether the rewards are hedonic or utilitarian.

Past research has documented that people have a tendency to equate smaller numbers with smaller magnitudes, an effect known as the numerosity heuristic (Pelham, Sumarta and Myaskovsky 1994). In the context of intertemporal choice, if the wait time for LL is

expressed as 3 months instead of 90 days, then people should perceive the wait time to be shorter and, consequently, become more patient. This is because using the larger unit of months results in a smaller number being used to express the wait time (i.e., '3' rather than '90'). We argue that consumers are more likely to fall prey to this numerosity heuristic when making decisions about hedonic (rather than utilitarian) rewards because hedonic rewards are known to increase reliance on feelings rather than careful calculation (Khan et al. 2005). Thus, hedonic rewards promote a reliance on heuristics rather than a careful consideration of all available information. This leads to our key prediction: Larger time units should lead to shorter wait time perception and, consequently, higher patience, but only when the rewards are hedonic rather than utilitarian.

We observe support for our prediction in 5 studies, three of which provide process evidence. Studies 3 to 5 show that the interactive effect of time unit and reward type on patience is mediated by how long the wait time is perceived to be. Study 5 demonstrates that the effect of units on wait time perception and patience is eliminated when participants are primed to calculate carefully, discouraging them from using heuristics.

## **Studies**

In study 1, participants made a hypothetical choice between the current version of a computer tablet versus a new and upcoming version. The tablet was manipulated to be either hedonic or utilitarian and the wait time for the new version was expressed as either 120 days or 4 months. We found that participants were more patient for the new version when wait time was expressed in months rather than days, but only when the tablet was hedonic (not when it was utilitarian).

In study 2, participants were first manipulated to think of money as a means to buy something hedonic versus utilitarian. Then they were offered either a small monetary reward that they could receive immediately or a larger monetary reward that they could receive later. The wait time for the larger reward was expressed as either 14 days or 2 weeks. We found that participants were willing to wait for the larger amount more when wait time was expressed in weeks rather than days, but only when they thought of money as a means to buy something hedonic (not utilitarian).

In study 3, participants were asked to imagine receiving a \$100 visa gift card and to think about what they will spend it on. They were informed that they could receive a \$110 gift card instead if they chose to wait. The wait time was expressed as either 14 days or 2 weeks. We found that participants chose to wait more when wait time was expressed in weeks rather than days, but only when they thought about buying hedonic (not utilitarian) products with the gift card. We also found that participants' wait time perception mediated the effect of units and reward type on patience.

In study 4, participants were asked to imagine buying a pair of headphones online, which were manipulated to be either hedonic or utilitarian. They made a choice between standard and expedited shipping, with shipping times expressed in either hours or days. For hedonic (but not utilitarian) headphones, we found that participants chose the standard shipping option more, and thus reflected more patience, when shipping times were in days rather than hours. Participants' wait time perception mediated the effect of units and reward type on patience.

In study 5, a 2 (time unit: small, large) x 2 (reward type: hedonic, utilitarian) x 2 (reliance on calculation: control, calculation prime) between-subjects design was employed. In the control condition, participants completed the same procedure as in study 4. In the calculation prime condition, participants first solved a few mathematical problems that would encourage careful consideration of all available information rather than the use of heuristics. We found that the results from study 4 replicated in the control condition, but in the calculation prime condition no significant effects were observed even when the rewards were hedonic.

## Discussion

We show that using larger units to express wait time can boost patience, but only when the rewards are hedonic and not when they are utilitarian. Studies 3 to 5 show that these effects are mediated by time perception, and study 5 shows that the effects are eliminated even for hedonic rewards when a calculative mindset is induced.

For more information contact: rafay.siddiqui@grad.moore.sc.edu

### *Performance-Enhancing Social Contexts: When Sharing Predictions About One's Performance Is Motivating*

Keri Kettle, University of Miami, USA\*

Gerald Häubl, University of Alberta, Canada

Isabelle Engeler, University of St. Gallen, Switzerland

Shared predictions are integral to many consumption activities. For instance, some organizations have individuals explicitly share personal goals with a group (e.g., CrossFit, Anthony Robbins Inc.), whereas other organizations providing on-line support groups, enable individuals to make public forecasts while their actual performance outcomes are kept private (e.g., Daily Strength, Weight Loss Buddy). Despite the ubiquity shared predictions in performance domains, however, it is not known if sharing a prediction affects performance.

As a social behavior, a shared prediction of one's own future performance can be used to convey different qualities about oneself. A more ambitious prediction can suggest that one is skilled and confident (Dunn et al. 2007), whereas a less ambitious prediction may convey one's modesty (Tice et al., 1995). Building on prior work on impression management, we hypothesize that a shared prediction may be more or less ambitious depending on the social context in which it is made. Further, we argue that ambitious predictions set expectations that direct behavior (Buehler et al. 2010) and that ambitious predictions enhance performance when the outcome is under personal control.

In particular, we examine two factors that influence the social context: (1) whether one's eventual performance outcomes are also going to be shared and (2) where the consumer is an expert in the performance domain. Our key proposition is that sharing predictions will have opposing effects for expert versus non-expert consumers. In particular, for non-expert (expert) consumers, sharing predictions leads to more ambitious predictions – and enhanced performance – when it is expected that eventual performance outcomes are unobservable (observable) to others. We tested our predictions in two field experiments in which over 300 distance runners shared a prediction of their performance before completing a race.

Experiment 1 was conducted in conjunction with a major marathon. Four months prior to the race, we recruited runners to participate. Using an only interface, we randomly assigned them to small groups (with runners they did not previously know). We independently manipulated (at a between-group level) whether the runners would share their race time prediction with their group members, and whether they expected their outcome would also be shared with fellow group members. As hypothesized, sharing their prediction led non-expert (expert) consumers to make more ambitious predictions – and subsequently perform better – precisely when they expected their performance outcome would be unobservable (observable) to others in the group. Predicted performance fully mediated the interactive effect of prediction (and outcome) sharing on performance.

In experiment 2, we intercepted individual runners in the waiting area immediately prior to a race. We randomly assigned them to small groups (with runners they did not previously know), and had them share their race time prediction with their group members. We manipulated (at a between-group level) whether the runners expected their outcome would also be shared with fellow group members. We then asked each participant to complete a short survey prior to the race, and we observed their performance in the race. Consistent with the results of experiment 1, expert (non-expert) runners made more ambitious predictions – and subsequently performed better – in the shared (private) outcome condition, and the predicted performance fully mediated the effect of expected outcome sharing on performance.

The present research is the first to examine how sharing a prediction affects performance, and is the first to show that the social context in which a prediction is made influences both the predicted and the actual level of performance. In doing so, we contribute to prior research on the effect of social context on performance (Baumeister, 1984) and recent work on the relationship between predicted performance and actual performance (Armor & Sackett, 2006; Kettle & Häubl, 2010) in two important ways: (1) the present work is the first to identify the social context in which predictions are expressed (and performance outcomes are observed) as a critical factor in understanding the interplay between predictions and performance; and (2) we contribute to literature that examines performance in a social context by demonstrating asymmetrical motivational effects of prediction sharing for consumers with low vs high expertise.

For more information contact: [kkettle@bus.miami.edu](mailto:kkettle@bus.miami.edu)

### ***Sadness Reduces Decisiveness***

Beatriz Pereira, Iowa State University, USA\*

Scott Rick, University of Michigan, USA

Consumers often make decisions while coping with distress that lingers from prior situations, and therefore emotions experienced more frequently and for longer periods of time should influence behavior more than emotions that are rare and short lived. Sadness is a particularly prevalent and long-lasting negative emotion (Jordan et al. 2011; Verduyn et al. 2009; Scherer, Wallbott and Summerfield 1986). Recent research has found that incidental sadness increases willingness to pay and impatience (e.g., Cryder et al. 2008; Garg and Lerner 2013; Lerner, Small and Loewenstein 2004; Lerner, Li and Weber 2013), suggesting that sadness leads to suboptimal decisions. However, beyond any influence on the quality of decision-making, sadness may influence the willingness to actively engage in decision-making in the first place, an issue that has not been explored in previous research (which has typically utilized paradigms that require participants to be decisive).

According to appraisal theory, sadness is characterized by a high sense of uncertainty (e.g., about one's ability to cope; Tiedens and Linton 2001), and these appraisals can color perceptions of subsequent situations. Prior work has documented that negative affect integral to the decision at hand increases the preference for status quo options (Luce 1998), but whether incidental sadness (i.e. sadness caused by events unrelated to the decision task at hand) reduces decisiveness is an open question. We propose that the uncertainty associated with the experience of sadness may reduce how certain people feel about the likely consequences of choice options, increasing choice difficulty and, consequently, indecisive behavior.

In Experiment 1, we examined whether incidental sadness reduced decisiveness, even when that hesitation comes at a cost. Participants watched either a sadness-inducing or neutral movie clip (Gross and Levenson 1995). Then, participants selected which of three restaurant gift cards they would buy for their friend's birthday: a \$60 gift card to a French restaurant, a \$60 gift card to an Italian restaurant, or a \$50 gift card redeemable at either restaurant. (Participants were asked to imagine that each was on sale for \$35 on

Groupon.) Indecisiveness in this context is reflected by choosing the flexible but low-value (\$50) gift card (deferring the final choice to the gift recipient). As predicted, sadness significantly increased the tendency to defer the final choice to the gift recipient (72% vs. 44%).

One limitation of Experiment 1 is that the gift giving context could potentially elicit positive emotions, complicating the interpretation of results. Therefore, in Experiment 2 we tested a similar scenario, but in this case participants chose a voucher for a local Restaurant Week (for themselves). Although the overall preference for this lower value option was reduced (consistent with the scenario, since there is inherently more certainty in choices made for the self), sadness significantly increased preference for the flexible option (27% vs. 15% in the control condition). Moreover, we also found that perceived choice difficulty mediated the effect of sadness on choice, providing evidence for our proposed underlying process.

In Experiment 3, we built on these results by examining whether any negative emotion increases indecisiveness or whether the effect is specific to negative emotions that generate appraisals of uncertainty. In particular, we examined anger, as it is generally as aversive as sadness, but is not associated with a sense of uncertainty (e.g., Smith and Ellsworth 1985). We also extended our investigation to a common financial decision-making domain, to test whether sadness reduces one's willingness to commit to a single course of action. Participants watched one of three movie clips that induced anger, sadness, or neutral emotion (Gross and Levenson 1995; Rottenberg et al. 2007). We then confronted all participants with a debt repayment decision (Amar et al. 2011), where one debt was large with a high APR and another was smaller, with a lower APR. In this scenario, participants could pay off the lower APR debt, but could only reduce the balance of the large, high-APR debt (the financially optimal decision). Completely paying off the low-balance card is tempting, which makes the decision difficult. Indecisiveness in this context is reflected by splitting the windfall across debts (e.g., reducing each debt by \$50), instead of choosing one clear strategy (choosing the normative course of action or fulfilling the goal of reducing the number of debts). A pre-test confirmed that splitting the debt payment is perceived to be significantly less decisive than allocating the entire windfall to one debt. Consistent with our theoretical account, sadness doubled indecisiveness relative to neutral emotion. There was no significant difference between indecisiveness in the anger and neutral conditions. We replicated this finding in a follow-up correlational study where participants rated their naturally occurring emotions and completed the debt repayment task (order counterbalanced). Only sadness predicted indecisiveness in a multiple regression.

Interestingly, if sadness impairs decisiveness, one would expect that smaller assortments would be beneficial to people experiencing this emotion. However, given that sad people are uncertain about their decision, they might believe that having more options will make their choice easier. In Experiment 4, we tested whether sadness increases preference for larger assortments. Specifically, we asked participants how many miles they were willing to drive to go to an optical shop that has a larger assortment of eyeglasses (Inesi et al., 2011). In this scenario, the higher the willingness to drive, the higher the search costs and the more participants would be delaying their purchase decision. As expected, participants in the sadness condition were willing to drive significantly more miles to reach a store with larger assortment than participants in the neutral condition.

Our work suggests that sadness reduces decisiveness even when hesitation is costly. It appears that sadness not only impairs the quality of decision-making, but also reduces the ability to commit to a course of action in the first place, due to increased perceived choice difficulty. Although indecisiveness was costly in our experiments, indecisiveness may prove beneficial if sadness-tinged decisions are indeed suboptimal. It is possible that costly choice deferral options might protect sad decision-makers from larger blunders. We intend to examine this possibility in future work.

For more information contact: pereira@iastate.edu



**Break**  
**9:30 am - 9:45 am**  
**Grand Palm Col. West**

**PLENARY SESSION 2 – Michael Platt, University of Pennsylvania**  
**9:45 am - 10:45 am**  
**Tarpon/Sawyer/Long**

**Break**  
**10:45 am - 11:00 am**  
**Grand Palm Col. West**

**Session 6**  
**11:00 am - 12:15 pm**

### ***Symposium: Judging Authenticity from Prosocial Gestures***

**Chair:** Rachel Gershon, Washington University, USA

#### ***Getting Credit for CSR: When Money Doesn't Talk***

Rachel Gershon, Washington University, USA\*

Cynthia Cryder, Washington University, USA

Recent literature about charitable giving and corporate social responsibility finds that donating is complex, both in terms of doing good and gaining credit (Newman et al. 2014). Authentic prosocial acts can be viewed as incompatible with self-interest, and inauthentic acts of giving can be judged as worse than not giving at all (Newman and Cain 2014, Lin-Healy et al. 2013).

Previous scholarly work has debated the best way for both individuals and corporations to receive charitable credit for giving. While financial donations are arguably the most useful for nonprofits to receive, we predict that corporate donations of tangible goods appear to be more authentic. Authentic motives are important for receiving charitable credit and might be key for corporate giving in particular due to firms' association with profit and susceptibility to suspicion regarding prosocial behavior. We therefore hypothesize that companies will receive less credit for giving money than for giving tangible goods, even though the same pattern will not be true for individual donors. Further, we predict that this effect is driven by differences in perceived authenticity.

We test our hypotheses across 5 studies. Study 1 investigated the perception of companies and individuals that donated either money or tangible goods. Participants were randomly assigned to read a brief vignette describing either a fictional company (Spades Hardware) or family (the Jones Family) that donated to their local food bank. Two groups of participants read that the company (family) donated \$50 and two groups read that the company (family) donated a box of canned food. Participants then rated the target on seven qualities: generous, altruistic, helpful, charitable, kind, beneficial, and "the extent to which they make the world a better place". These qualities loaded onto a factor, which we call "charitable credit". As hypothesized, firms received less charitable credit for giving money than for giving tangible goods, whereas the opposite pattern was found for individuals.

Studies 2a and 2b address two alternative explanations for our goods versus money findings; first, that the mere mention of money decreases perceptions of generosity, and second, that the finding is due to perceptions of wealth.

Study 2a included 3 conditions in which participants were told that Spades Hardware donated \$50, a box of canned food, or \$50 worth of canned food. If donating money backfires for firms because monetary donations remind people of firms' profit goals, then adding monetary value to a goods donation should also decrease firms' charitable credit. Results showed, however, that charitable credit was equivalent in both the box of food and \$50 worth of food conditions, and both of these conditions garnered more charitable credit than the monetary donation condition. We also asked participants in the box-of-food condition to estimate the monetary value of the donation and got an average value of \$50.25. This helps us to rule out the possibility that participants are overestimating the monetary value of the goods donation.

Study 2b further investigated whether the sometimes distasteful link between firms and profit could be responsible for firms' decreased charitable credit for monetary donations. To test this idea, we manipulated the wealth of both a family and a corporation in a 2 (donor: Jones family vs. Spades Hardware) x 2 (wealth: average vs. wealthy) between-subjects design. For Spades Hardware, we found that wealth did not affect charitable credit: donations of food were regarded as more charitable than monetary donations regardless of the firm's wealth level. For the Jones family, being wealthy made donations of money somewhat less favorable, but only to a degree such that donations of money and tangible goods were viewed as equivalent for wealthy families (whereas monetary donations were still viewed more favorably than goods donations for average families).

Study 3 tested the hypothesis that effort and authenticity are key mediators of the money vs. goods effect. We asked participants to rate Spades Hardware on effort and authenticity related to their donation of money or tangible goods. As predicted, donations of tangible goods garnered more charitable credit by increasing perceptions of charitable effort, and subsequently increasing perceived authenticity. A serial mediation model (Hayes 2013) confirmed a mediation pattern whereby corporate donations of tangible goods increase perceived charitable effort, subsequently increasing judgments of authenticity, and ultimately, increasing judgments of charitable credit (95% CI for the indirect effect: [0.036, 0.61]).

Study 4 tested whether boosting perceived authenticity of a company's monetary donation could increase the charitable credit that they receive. We tested the money vs. goods donation as in previous experiments, and added a third "authentic money" condition that included a quote from a charity volunteer attesting to the company's passion for the cause. Boosting the company's authenticity in this way increased the charitable credit that the company received, thus moderating the money versus goods effect.

Study 5 replicated our findings with real-world companies and documented an additional boundary condition. Participants evaluated one of two companies, Pepsi or Bolthouse Farms, and imagined that the company donated either \$1,000 cash or \$1,000 worth of canned food. Pepsi is a large company with a strong corporate image whereas Bolthouse farms is a smaller company that advertises healthy farm-grown products. We predicted that the goods versus money effect would be stronger for Pepsi versus Bolthouse Farms because Bolthouse farms already offers a wholesome image and thus may not be required to send additional signals of prosocial authenticity. Results confirmed our hypothesis, specifically, Bolthouse farms received high judgments of charitable credit regardless of their donation type whereas Pepsi received judgments of high charitable credit only when donating tangible goods.

Companies using corporate philanthropy to advertise social responsibility should be aware that consumers judge donations from corporations differently than donations from individuals. To maximize charitable credit, corporate donations must appear authentic. We find that consumers perceive corporate donations of money to be less motivated by authentic prosocial goals than corporate donations of

tangible goods. Corporations aiming to maximize both charitable impact and charitable credit might do best to seek matches between non-profit needs and tangible goods that they can provide.

For more information contact: cryder@wustl.edu

***When Payment Undermines the Pitch: On the Persuasiveness of Pure Motives in Fundraising***

Alixandra Barasch, University of Pennsylvania, USA\*

Deborah A. Small, University of Pennsylvania, USA

Jonathan Z. Berman, London Business School, UK

Incentives sometimes have perverse effects. For activities that provide their own inherent reward, the introduction of an external motivator can displace intrinsic motivation and thereby reduce effort in those activities (for reviews, see Deci, Koestner, & Ryan, 1999; Gneezy, Meier, & Rey-Biel, 2011). Such effects are prevalent in prosocial behavior, where external incentives have been shown to backfire, or “crowd out” a wide range of actions, from blood donations to volunteer efforts to environmentally-friendly behavior.

Incentives are typically thought to affect behavior through the channel of motivation. Therefore, past investigations of crowding out have examined effort, persistence, and monetary contributions allocated towards helping others. However, sometimes doing good requires more than just effort. Fundraising, in particular, requires the ability to communicate persuasively. The present research investigates this additional channel through which incentives may matter: how will incentives affect an advocate’s ability to persuade others to donate to a cause?

We predict that the best advocates for a cause are those whose motives are pure. Without any incentive, a caring individual will express his true concern for a cause in a way that appears sincere to others. However, when an incentive is introduced, the same action becomes disingenuous—impeding an individual from effectively communicating that they care. We further expect that donors will be sensitive to the sincerity of an advocate’s pitch and this will affect their donations. We predict that donors will detect less sincerity in persuaders who have been selfishly incentivized—even without knowing that incentives are present—and this will reduce their contributions.

To test our hypothesis, we conducted two large-scale field studies that took part in two stages. In Study 1, we examined the basic comparison between incentivized and non-incentivized persuaders. In phase one, 93 students were recruited from community service groups to make a pitch on video for a charity organization of their choice. Students were randomly assigned to one of two groups. In both conditions, persuaders read that someone would subsequently view their video and have a chance to donate to their organization. In the Incentive condition, persuaders also read: “As a bonus, for every \$10 that the potential donor gives to your charity organization, we will send you a \$1 reward.” In the No Incentive condition, this statement was omitted.

Phase two consisted of a separate online sample of 465 target donors who watched one recorded charity appeal (5 donors per video). After watching the appeal, target donors read that they would receive additional money on top of their participation fee, which they could keep or donate any portion to the cause in the video. Target donors also rated the persuader who made the appeal on 6 items: sincerity, genuineness, caring about their cause, commitment to their cause, emotionality, and expressed feelings (averaged to form an overall composite measure of perceived sincerity;  $\alpha=.94$ ).

A nested one-way ANOVA revealed a significant effect of condition on donation amount ( $F(1,372)=11.53, p<.001$ ). Participants donated less money when the persuader received an incentive for soliciting donations ( $M = 8.45$ ) than when the persuader did not receive

an incentive ( $M = 11.95$ ), even though target donors were unaware of the existence of any incentive. Similar analyses revealed significant effects on judgments of the individual's perceived sincerity ( $F(1,372)=7.52, p<.01$ ). Bootstrap analyses find that sincerity mediated the effect of incentive condition on donations (95% C.I. [-1.57,-.23]), such that incentives decrease the perception that the persuader sincerely cares about a cause, which in turn decreases how much target donors give to their cause.

The goal of Study 2 was to replicate these findings and to examine one boundary condition. We expect that when an incentive does not contradict an individual's pure motives for helping others, it will not hurt persuaders' effectiveness. Therefore, we include a third condition representing a non-selfish, matching incentive.

The study followed similar procedures as Study 1. We recruited 115 students who volunteered for a study to help a charitable organization of their choosing. The persuaders were then randomly assigned into one of 3 conditions. Similar to the previous study, persuaders in the No Incentive condition simply learned about the task and persuaders in the Personal Incentive condition read that they would receive a \$10 reward for every \$10 that is donated to their cause. In the Matching Incentive condition, the persuader instead read the following: "As a bonus, for every \$10 that is donated to your charity organization, we will "match" it by giving an additional \$10 to the cause. In other words, the more money people donate to the cause from watching your charity appeal, the more money we will give to that cause."

In phase two, we showed the videos to a separate sample of 861 target donors, who could donate any portion of a \$1 bonus to the cause advocated for in the video. Then, they evaluated the persuader on the same six-item measure of perceived sincerity ( $\alpha = .94$ ). Consistent with our key hypothesis, there was an overall effect of incentives on donation amounts ( $F(2,746) = 5.19, p < .01$ ). Replicating findings from the previous study, participants donated less money when the persuader received a personal incentive for soliciting donations ( $M = 18.83$ ) than when the persuader did not receive an incentive ( $M = 26.16$ ), even though target donors were unaware of the existence of any incentive. Importantly, the matching incentive ( $M = 26.21$ ) did not differ from the no incentive condition, and did lead to greater donations than the personal incentive condition. Similar patterns followed for perceptions of sincerity ( $F(2,746) = 4.12, p = .02$ ), which again mediated the effect of incentive condition on donations (Indirect Effect =  $-2.16, SE = .89; 95\% \text{ C.I. } [-3.95, -.49]$ ).

In sum, incentives may affect individuals in ways not previously investigated: by crowding out their sincerity of expression and thus their ability to influence others' support for a cause.

For more information contact: [abarasch@wharton.upenn.edu](mailto:abarasch@wharton.upenn.edu)

### ***Same Wrong, Different Restitution? Heightened Sensitivity to Inequity in the Context of Apology***

Emily Rosenzweig, Tulane University, USA\*

Clayton Critcher, University of California Berkeley, USA

Air travel has become a literal enactment of class hierarchy. Those who fly frequently go through security faster, are seated first, claim their bags first, and are awarded more miles for the same trip. Such inequitable treatment is the new normal, and although it may prompt envy, it rarely prompts outrage. However businesses use loyalty status to allocate more than just perks. Much like people, companies often need to apologize for their bad behavior. Corporate apologies are typically accompanied by compensation designed to make up for the wrongs they have inflicted on their customers.

Businesses are increasingly factoring loyalty status into their apologies, apologizing to their more-valued customers with more generous reparations for the same infraction. We hypothesized that although inequitable treatment is never welcome, inequitable apologies would be seen as especially unfair, because they violate a norm of equity embedded in our expectations of apologies. When making amends for the same wrong, an apologizer is expected to offer equitable restitution. If a careless waiter spills a bottle of wine on two customers, it would be inappropriate to comp one patron's meal while merely bring a free dessert to the second. Yet many businesses do just this when doling out different sized vouchers in apology for the same poor service.

Across five studies, we demonstrate that inequitable treatment is evaluated particularly harshly in the context of apology, and that this appears to be due to violations of the norms surrounding what it means to apologize. Participants in Study 1 imagined receiving a flight voucher as an apology for a delayed flight, or as a celebration for being on the airline's one-millionth flight. Although participants always received the same amount, we varied whether the frequent flyer sitting next to them received the same (equitable) or greater (inequitable) compensation. While inequity rankled in both conditions, participants were significantly more troubled by inequitable (relative to equitable) compensation when that compensation was offered as part of an apology for the airline's wrongdoing.

Studies 2 and 3 were complementary in testing and ruling out the alternative hypothesis that negative experiences merely sensitize people to subsequent inequitable treatment. In Study 2 all participants imagined taking a cruise to celebrate their anniversary, where they were part of large group of people who contracted food poisoning on board the ship. Participants received flowers from the cruise line either as compensation for that awful experience or as an anniversary gift, and their bouquet was either the same size or smaller than the bouquet received by a first-class passenger for the same reason. Once again, people were significantly more upset by inequitable compensation when it was framed as part of an apology, despite the fact that neither the injury they had suffered nor the inequity they experienced differed between the apology and anniversary gift conditions.

If our hypothesis is correct, the norms governing corporate apologies should only be invoked when the conditions for apologizing have been met—specifically, when a company has done something to be sorry for. This suggests that companies who 'apologize' for customer experiences outside of their control of should not be penalized as harshly for inequitable compensation as those who were responsible for what their customers suffered through. Study 3 asked participants to imagine that they had stayed at a hotel where they were awoken several times in the night, either by the hotel's own fire alarm or by the fire alarm from a building next door. Despite having suffered through the same negative experience, participants found their hotel's inequitable compensation significantly more troubling when offered in compensation for its own fire alarm than when offered in compensation for the inconvenience caused by the neighboring building.

Study 4 further probes the nature of people's mental model of apologies. Given that people appear to expect compensation to be proportional to harm, we explore whether this expectation applies only to the harm a company is directly responsible for (like a flight delay) or also extends to the harm that customers experience indirectly as a result of those actions (like missing an event as the result of that delay). Surprisingly, people appear to be sensitive to both; this means that participants mitigated their negative response to inequitable apologies both when a higher status customer had suffered a longer flight delay and when a higher status customer had suffered greater consequences as a result of a flight delay—despite the fact that the company itself could not have known about those inequitable consequences.

Finally, Study 5 explores how companies can avoid angering the bulk of their customer base while still favoring their most valuable customers. We test two strategies, one which explicitly dissociates the compensation from the apology itself, and another which makes it clear that they expect customers of different status levels to experience different consequences from the company's actions. Further supporting our narrative, both of these approaches reduces the degree to which customers penalize companies for apologizing

inequitably. Taken together, these studies highlight the importance of social norms in shaping how customers respond to corporate efforts to make amends, and implications for business that may stem from those implicit expectations.

For more information contact: [erosenzw@tulane.edu](mailto:erosenzw@tulane.edu)

### ***The Forest for the Trees: Overhead Aversion and Cause Involvement***

George E. Newman, Yale University, USA\*

Adam Schniderman, Texas Christian University, USA

Kyle Sevel, Yale University, USA

Existing research has established that individuals are highly sensitive to the amount of overhead in charitable fundraising (i.e., money spent on administrative and fundraising expenses). But who is more concerned about the amount of overhead—individuals who are deeply committed to the cause or individuals who are less committed? Five studies demonstrate that individuals who are more committed to the cause are in fact, accepting of higher levels of overhead. This effect appears to arise from differences in the degree of rational versus emotional processing, which in turn, enhances individuals' focus on the overall outcomes for the charity. To date, existing research in this area has largely focused on demonstrating that individuals may be biased against pro-social efforts that seem 'less than pure.' The present studies, however, highlight an important moderator of this effect and in so doing suggest a more general relationship between an individual's degree of involvement and their relative focus on the intentions behind a pro-social action versus the outcomes achieved.

The design of Study 1 was relatively straightforward: Half of the participants were asked to write about the charitable cause that was the most important to them, while the other half were asked to write about a cause that was not very important to them. Then, participants read a brief paragraph about the benefits of charitable overhead and were asked to indicate what would be highest level of acceptable overhead for a charity involved with that particular cause (more vs. less important). The results indicated that participants were willing to accept a higher level of overhead for causes that they are strongly committed to versus those that they are weakly committed to.

Study 2 provided converging evidence using a different paradigm. First, we used a more controlled measure of charity importance. At the beginning of the study, participants were presented with a list of eight charities and were asked to rank them from most important to least important. Then, participants were presented with a series of hiring decisions regarding an upcoming fundraising event. Each decision provided information about how much money could be earned for the charity (either the charity ranked most important by that participant, or the charity ranked least important) and how much would go to overhead. As the amount of money for the charity increased, so did the amount dedicated to overhead. Thus, this study created an explicit tradeoff between more (vs. less) overhead and better (vs. worse) outcomes for the charity. Consistent with the results of Study 1, we observed that participants were willing to accept a higher level of overhead for causes that they are more (vs. less) committed to, which resulted in more money raised for that charity.

Study 3 provided process evidence linking differences in cause involvement to differences in rational versus experiential processing. To accomplish this, we used an established scale (the Rational-Experiential Inventory, Pacini & Epstein, 1999). In this study, we also wanted to examine differences in cause involvement for the same cause. Accordingly, we selected a charitable cause that was likely to appeal to different demographics—namely, environmental conservation. Following a series of items designed to measure cause involvement for environmental issues, participants engaged in a similar task as Study 2 where they made decisions about fundraising opportunities that differed in both the total amount of money raised, and the amount dedicated to overhead. All participants then completed a series of measures designed to assess the focus on outcomes for the charity per se, as well as the REI. The results of this

study indicated a specific serial mediation model whereby differences in cause involvement lead to more ‘rational’ processing, which in turn lead to a greater focus on outcomes (via explicit measures), and a greater likelihood of selecting the fundraiser that earned more for the charity, but had higher overhead costs.

Study 4 expanded the scope of the effect by showing that cause involvement more generally impacts how people evaluate the intentions behind a pro-social action versus its outcomes. To test this, participants completed a very similar task to Study 2. However, in this study we did not mention overhead, and the intentions of the fundraising organization were made explicit. Specifically, in the case of the organization that raised more money for the charity, we stated that their intention was solely to enhance their own reputation. In contrast, for the organization that raised less money for the cause, we stated that their intention was solely to fulfill the charity’s mission. Mirroring the results of the previous studies, we found that greater cause involvement lead participant to focus on the outcomes to the charity, despite the organization’s “less than pure” intentions.

Study 5 sought to establish a direct causal relationship between involvement and outcome-based reasoning. Additionally, we aimed to conduct an ecologically valid test. Therefore, the dependent measure in this study was a real donation decision involving actual charities and all information (including the manipulation as well as the information about outcomes and overhead) was taken directly from publicly available sources. Participants first read an excerpt from a New York Times article. In the experimental condition, the article discussed the importance of providing clean drinking water to the developing world. In the control condition, the article discussed the continued rise of charitable donations in 2015. Following, participants read about two charities that provide clean drinking water to those in need. One charity provided more total aid, but had higher overhead costs than the other charity. Consistent with the previous results, we found that participants were more likely to donate to the charity that provided more total aid when they first read about the importance of clean drinking water than when they read the control article. Additional measures also confirmed a serial mediation model whereby reading the article about clean drinking water increased the perceived importance of the cause itself, which in turn, increased the amount of rational processing and ultimately, the likelihood of donating to the charity that provided more aid overall.

For more information contact: [George.newman@yale.edu](mailto:George.newman@yale.edu)

## ***Symposium: Experiencing experiences: Great strategies for designing, purchasing, and enjoying experiences***

**Chair:** Miranda Goode, Ivey Business School, Canada

### ***Designing a Hybrid Experience: The Effect of Experience Structure and Similarity on Preferences***

Juan Wang, University of Ontario Institute of Technology, Canada\*

Miranda Goode, Ivey Business School, Canada

June Cotte, Ivey Business School, Canada

Imagine planning a spring vacation, and you see an ad featuring a six-day volunteer-tour trip. The ad conveys an exciting itinerary where you will spend half of the trip as volunteer helping with jungle restoration in the Amazon and the other half leisurely touring popular destinations in Peru. This is a prime example of a hybrid experience, an experience that is composed of two or more individual constituent experiences that are traditionally consumed independently of one another. To cultivate consumers’ desire for this experience, an important decision must be made by marketers: how should the experiences in the trip be organized? That is, should a marketer structure the trip such that consumers will complete the jungle restoration experience in the first three days before moving on to the

touring portion (sequential structure), or should a marketer structure each day to include both jungle restoration and touring activities (alternating structure)? Further, before this decision is even made, a marketer must consider what types of experiences should be offered together. Indeed, would the jungle restoration experience be more attractive paired with sightseeing in Peru or with the experience of teaching English in villages within the jungle?

In five studies, we find that alternately (vs. sequentially) structured hybrid experiences are more preferred. This is because a greater number of benefits are perceived with the alternately structured hybrid experience. For example, when the volun-tour trip is structured sequentially, consumers may infer that the jungle restoration experience will be spiritually rewarding and that the touring experience will be fun. In other words, the multisensory elements, events, and benefits of each experience are processed mainly independently of one another. In contrast, insights from script theory and variety seeking literatures suggest that consumers will perceive additional benefits (which we refer to as complementarity inferences) when the jungle restoration and sightseeing experiences are alternated throughout the trip. Not only will consumers identify that the jungle restoration will be spiritually rewarding and the sightseeing will be fun, but they may also infer that boating along the Amazon River (touring event) will be relaxing after finishing a half-day of tree-planting (volunteer event). Further, appreciation of the river-maintenance activity (volunteer event) on the following day may also be enhanced. It is these complementarity inferences that we find enhances consumer preferences for alternately structured hybrid experiences.

We also find that the positive effect of an alternately structured hybrid experience on preference is influenced by experience similarity. In designing a hybrid experience, marketers must determine what types of experiences should be paired. Is it better to pair two constituent experiences that may evoke similar or dissimilar emotions or contribute to similar or dissimilar consumption goals? For example, the jungle restoration experience and an English teaching experience may be perceived to be more similar because both involve a significant amount of preparation and work. In contrast, visits to popular beach destinations may be considered less similar to jungle restoration activities, because they differ in potential to contribute to a goal of relaxation. Specifically, we find that the positive effect of an alternating structure is greater (less) for hybrids composed of less (more) similar constituent experiences. This is because an alternating structure motivates a greater number of complementarity inferences. Again, to use the volun-tour trip as an example, an alternating structure will enhance the preference of a trip composed of jungle restoration and beach visits, but has less of an influence on a trip involving jungle restoration and English teaching.

Studies 1 and 2 show that an alternately (vs. sequentially) structured hybrid experience is perceived more favorably to consumers. Participants (N=39) in study 1 completed two within-subjects tasks (order counterbalanced). In a fitness-leisure experience choice task, significantly more participants preferred the alternately structure experience; and in an educational trip design task (composed of educational and sightseeing activities), the trip was more likely to be designed in an alternating format. Study 2 had participants (N=110) evaluate a French Festival event (composed of film screenings and acrobatic performances) in a between-subjects design. Again, the alternately (vs. sequentially) structured event was evaluated significantly higher.

In study 3, participants (N=400) were asked to list their thoughts about the sequencing of activities in two hybrid experiences, an educational tour to Singapore and a weekend volun-tour (order counterbalanced) and then evaluated the experiences. Participant thoughts were coded for complementarity inferences. As expected, the number of inferences mediated preference for the hybrid experience, such that a greater number of complementarity inferences were generated for participants who viewed an ad for the alternately structured hybrid experience. Further, some participants were provided with complementarity inferences in the sequentially structured hybrid experience condition, and their evaluations increased in comparison to when inferences were not provided. In study 4, we manipulated participants' (N=150) ability to generate complementarity inferences. When cognitively taxed, participants generated fewer complementarity inferences and this resulted in less favorable evaluation of an alternately structured hybrid experience.



In study 5, we examined how experience structure and similarity jointly affect hybrid experience evaluation. Participants (N=222) were asked to evaluate a Halloween Zombie event. The less similar hybrid experience was composed of a Zombie run and makeup activities, while the more similar experience was composed of a Zombie run and film watching activities (similarity was pretested and confirmed with a manipulation check). As proposed, the positive effect of an alternating structure on experience evaluation is significantly greater for hybrid experiences composed of less (vs. more) similar constituent experiences. Little is known about how preferences are formed for hybrid experiences, an increasingly popular experience offering. Thus, we offer insight into this and identify how managers can best design hybrid experiences.

For more information contact: mgoode@ivey.ca

### ***The Material-Experiential Asymmetry in Present Bias: Why Material Items Lead to Less Present Bias***

Joseph Goodman, Washington University, USA\*

Selin Malkoc, Washington University, USA

Mosi Rosenboim, Ben Gurion University, Israel

Money is meaningful to the extent that it can be converted into goods, experiences, or savings. That is, money is acquired so it can be spent on doing things (experiential purchases) or having things (material purchases), either in the present or future. Yet most of the research on how consumers delay purchases over time (a.k.a., present bias, hyperbolic discounting; for a review see Berns, Laibson, and Loewenstein 2007) has focused on monetary outcomes. Similarly, almost all of the research on experiential consumption has ignored the anticipatory value—how consumers anticipate and delay an experience (Dunn and Weidman 2015). This paper examines systematic differences that arise from delaying experiential consumption.

Present bias refers to a declining rate of discounting as the duration to delay gets longer. For example, consumers generally require a higher daily premium to avoid a 3-day delay in delivery (about \$5, \$1.8/day) than a 10-day delay (about \$10, \$1/day; Malkoc and Zauberaman 2006). For material and experiential purchases, there is an important distinction in terms of intertemporal choice—the number of episodes over which they are consumed. While experiences are usually consumed on a single occasion (e.g., concert or massage), the utility from material items are extracted through repeated use (e.g., couch or shoes). We suggest that because experiences are often consumed at the first episode, at the point of consumption, the utility from the experience appears larger and the perceived pain in delaying greater. Conversely, material items are consumed over time and as such their overall utility is distributed over multiple smaller episodes. As an outcome, the perceived overall utility at the point of consumption appears smaller and a further delay less disruptive. Across five studies we test our theory and examine whether consumers show more present bias for experiences and whether the number of consumption episodes is responsible for this effect.

To test whether material/experiential purchases are discounted differentially, 176 undergraduates took part in a 2(Purchase Type: Material vs. Experiential) x 3(Time: 1 week, 1 month, 3 months) mixed design (time within). Participants indicated the most they were willing to accept to delay receiving a \$950 couch (material) or a \$950 5-day vacation (experience). Results showed the predicted interaction ( $F(1,174)=28.75, p<.001$ ), where present bias (i.e., declining monthly premiums) was more pronounced in the experience (M1week=\$1479, M1month=\$803, M3month=\$659,  $p<.001$ ) than material condition (M1week=\$349, M1month=\$255 vs. M3month=\$204;  $p<.001$ ; interaction:  $F(1,174)=28.75, p<.001$ ).

While Study 1 provided the type of material (couch) and experiential (vacation) purchase, Study 2 asked 350 Mturk workers to generate either a material or experiential purchase (worth \$1000). The study followed the same 2 x 3 design with both factors manipulated

between subjects). Replicating study 1 with self-generated purchases, we find the same interaction ( $F(2,346)=12.92, p<.001$ ): Participants who delayed an experiential purchase showed more present bias (M1week=\$1445, M1month=\$496, M3month=\$328;  $F(2,189)=7.65, p<.01$ ) than those who delayed a material one (M1week=\$409, M1month=\$353, M3month=\$170;  $F(2,196)=5.43, p<.01$ ). Several other measures (excited, disappointed (to give up the purchase), regret, curiosity, worry, or concern that others would receive more money for the delay) failed to show a significant purchase type by time interaction ( $p$ 's>.15), ruling out alternative accounts.

One issue with the previous studies is their inability to keep the product constant across condition. In Study 3 we held the product category constant (television) and manipulated whether it was perceived as more material or experiential (adapted from Rosenzweig and Gilovich 2012). Then, 271 Mturk workers responded to a delay-discounting task (delaying delivery by 3 or 10 days; within-subject). Results again showed significantly more present bias ( $F(1,269)=3.82, p=.053$ ) in the experience condition (M3days=15.38, M10days=10.68;  $F(1,269)=93.90, p<.001$ ) than material (M3days=14.14, M10days=10.68;  $F(1,269)=50.69, p<.001$ ).

Studies so far have directed participants' attention to the material/experiential nature of the purchases. In Study 4 we remedied this by asked 279 Mturk workers to generate any \$1000 purchase (without priming material or experiential) and then indicate how much they would demand to delay their chosen purchase for 3 days and 10 days. Afterwards, they rated the purchase as either more experiential (6) or more material (1). Consistent with previous studies, the purchases that were rated as more experiential showed greater present bias ( $b=2.86, t(278)=3.85, p<.001$ ).

Finally, Study 5 provides evidence for the differential number of consumption episodes as the psychological process underlying the material-experiential asymmetry. To do so, we manipulated the number of episodes it takes to consume an experience. We asked 375 Mturk workers to choose a class they would like to take (from a list of 8 options) being offered in one of two formats. In the single-episode condition, there was a single six-hour class; in the multiple-episode condition, there were six one-hour classes. Everyone then delayed taking these classes by one month and three months. As expected, participants exhibited present bias when delaying the single-episode experience, like a traditional experience (M1month=44.83, M3months=41.43;  $F(1,375)=4.54, p<.05$ ), but did not show any present bias when delaying a multiple-episode experience, like a traditional material purchase (M1month=47.72, M3months=49.21;  $F(1,375)<1$ ).

In sum, the results show that how money is spent affects present bias: Consuming experiences not only led to larger discount rates than material purchases, but these discount rates decreased faster over time (i.e., more time inconsistent preferences). This demonstrates an important consequence of the type of outcomes used when studying present bias, and helps explain why some researchers have found vastly different discount rates across experimental stimuli (and sometimes found little evidence of hyperbolic discounting in a durable good context, Dube, Hitsch, and Jindal 2015). Further, the results identify an instance when material items evoke a more desired pattern of preference (i.e., time consistence) than experiential ones and suggest that decision makers may make more rational discounting decisions when first considering how to spend monetary outcomes.

For more information contact: [goodman@wustl.edu](mailto:goodman@wustl.edu)

### ***Enhancing Consumption Enjoyment in Real Time: An Intriguing Upside of Savoring the Future***

HaeEun Helen Chun, Cornell University, USA\*

Kristin Diehl, University of Southern California, USA

Deborah MacInnis, University of Southern California, USA

Maximizing consumption enjoyment is linked to consumer happiness and wellbeing. It also positively impacts repeat purchase, word of mouth, and a brand's marketplace performance. Given its importance, we explore a driver of consumption enjoyment that marketers in a variety of product or consumer markets might implement. We propose that marketers can enhance consumption enjoyment by influencing the extent to which consumers savor the consumption experience in advance of its occurrence. Whereas prior studies have focused on the immediate pleasure from the act of savoring itself (e.g., Kumar, Killingsworth, and Gilovich 2014; Loewenstein 1987; Lovallo and Kahneman 2000), we focus on savoring's downstream consequences on consumption enjoyment by exploring whether encouraging consumers to savor affects how much they ultimately enjoy that previously savored experience as it actually happens.

How can savoring affect enjoyment of the consumption experience when it happens? When people savor a future consumption experience, they envision aspects of that upcoming experience (e.g., seeing the Eiffel Tower in Paris). More critically, they are also attending to and are aware (i.e. mindful; Brown and Ryan 2003) of the fact that it is the act of savoring that makes them feel good now. We predict that such mindfulness of positive feelings while savoring creates memory traces of one's state of mindfulness. When consumers subsequently experience the actual event in real time (e.g., seeing the Eiffel Tower), they activate these traces. In turn, activation of these memory traces can induce people to be mindful of how good the actual experience feels as it unfolds, heightening real-time consumption enjoyment. Thus, consumers remember an experience that was savored prior to its occurrence as more enjoyable. The mindfulness explanation is both novel and distinct from the idea that the experience is merely remembered as being more enjoyable (e.g., Klaaren, Hodges, and Wilson 1994; Mitchell et al. 1997) when savored. We also find that savoring impacts consumption enjoyment through mindfulness independently of its effect through affective expectations (a previously identified driver of consumption enjoyment). Finally, because mindfulness helps people adapt better to less pleasant experiences (Brown and Ryan 2003), savoring buffers against experiences that are less positive than expected. These findings are observed in five studies involving (a) diverse and meaningful consumption experiences that participants live through, (b) diverse research methodologies (e.g., secondary data, field study, and lab experiments), and (c) diverse manipulations of savoring the future.

First, as a pilot study, we analyzed data from the J.D. Power Hotel Guests Satisfaction Survey (N=71,929). We used the data on how far in advance a guest booked their hotel for a trip they took in the past month (as a proxy for opportunities to savor), the purpose of participants' stay, and how much they enjoyed their stay. In support of our prediction about the relationship between savoring and enjoyment, a longer booking window heightened enjoyment for leisure travelers (who are more likely to savor) but not for business travelers (who are less likely to savor).

Beyond this correlational relationship, in Study 1, we manipulated savoring a future consumption experience (here multi-day Thanksgiving vacation) via a series of reminders. While companies often use these reminders (e.g., "Your Disney experience starts right now!") to engage guests during the wait period, we are interested in whether such reminders actually enhance enjoyment of the consumption experience. For seven nights prior to the vacation, undergraduates (N=131) received email reminders to use an online journal to briefly write about how their upcoming vacation makes them feel at the moment (in the savoring condition) or their activities for the day (in the control condition). Consumers who savored an upcoming vacation enjoyed it more in real time (as measured with text messages during the vacation) and remembered the vacation more favorably immediately after the experience and after a 2-week delay, suggesting that the effects endure.

We conducted Study 2 in a controlled environment involving identical experience. We manipulated savoring the future by randomly assigning participants (mTurk; N=340) to a trailer that was either related or unrelated to the target movie. We predicted that enjoyment of the target movie will be greater for those who watch a related (vs. unrelated) trailer, as only the related consumption experience is able to activate memory traces of the focal experience and enhance savoring. Indeed participants who savored watching the target movie by

watching a related trailer indicated greater real-time enjoyment (as recorded with a bipolar slider while watching it) and greater remembered enjoyment than did those in the control condition.

Building on these results, Study 3 (using undergraduates; N=153) tests the proposed mindfulness mechanism through which savoring increases consumption enjoyment. When we independently manipulated mindfulness by asking participants to be mindful of their feeling while the experience unfolds, the level of mindfulness (and enjoyment) was similar to when savoring alone was manipulated. When we also made participants who had savored an upcoming experience distracted from being mindful while the experience unfolds, they no longer experienced heightened enjoyment. Additional analysis confirmed that while savoring the future heightens affective expectations, it also impacts consumption enjoyment independently through mindfulness. These findings all support the proposed mechanism.

Finally, Study 4 (using undergraduates; N=138) tests whether savoring buffers against situations where experiences turn out to be less enjoyable. To address this issue, we independently manipulate expectations of the consumption experience (positive vs. less positive) and the nature of the experience itself (positive vs. less positive), beyond manipulating savoring. The results reveal that savoring positively impacts enjoyment of positive experiences, and it does so independent of expectations. Savoring also has a positive effect on remembered enjoyment even when the experience does not live up to expectations.

Together, these studies suggest that encouraging consumers to savor a future consumption experience prior to its occurrence positively impacts how enjoyable consumers find the experience to be, and in retrospect, how enjoyable they remember the experience to have been. Clearly, these findings underscore the benefits that marketers might realize from using savoring-inducing tactics.

For more information contact: hc633@cornell.edu

### ***Does Taking Photos Get in the Way? - The Effect of Photo-taking on the Enjoyment of Experiences***

Alixandra Barasch, University of Pennsylvania, USA

Kristin Diehl, University of Southern California, USA\*

Gal Zauberman, Yale University, USA

Experiences are vital to the lives and well-being of people. In particular, experiences contribute to people's identities and bring them life satisfaction (e.g. Van Boven & Gilovich 2003). Yet despite the importance of experiences, we know relatively little about what makes certain experiences more or less enjoyable.

One important factor that has been shown to affect enjoyment is the extent to which people are engaged with the experience (e.g. Csikszentmihalyi, 1997). While many individual and situational forces could potentially influence engagement, in this project we are particularly interested in whether or not people take pictures during an experience affects engagement and enjoyment. Note that photo-taking may have multiple important downstream effects (e.g., on memory, sharing, etc.), yet our interest in this project is to understand whether enjoyment of the experience itself is affected by whether or not people take photos during that experience. With recent technological innovations, photo-taking has become a daily and ubiquitous activity for millions of people. While it is difficult to assess precisely how many photos people actually take, National Geographic (2012) estimates that in 2011 Americans alone took 80 billion photos, about 255 per person. Worldwide Facebook users uploaded a total of 128 billion photos in 2013, or 111 photos per user (Facebook 2013).

In this project, we are interested in a very specific question: how does taking photos affect people's enjoyment of experiences? Lay beliefs regarding this question vary widely. For example, some business owners and performers have banned cameras from restaurants and concerts, arguing that taking photos will ruin individuals' experiences (Stapinski, 2013; Wright, 2012). However, the prevalence of photo-taking across countless situations suggests that many individuals do not perceive photo-taking as detrimental to their experiences and enjoyment. In order to more systematically assess people's lay beliefs about the effect of photo-taking on their experiences, we asked 203 online respondents (65% male, 18 to 60 years, average age: 30.3 years) for their intuitions. Approximately 41% thought that taking photos during an experience would increase enjoyment of the experience, while 31% thought it would decrease enjoyment, and 28% thought it would not affect enjoyment at all. Clearly, people do not share a single intuition as to how taking photos will affect their evaluation of experiences.

Surprisingly, prior research has not studied how taking photos affects enjoyment of the experiences being photographed. To answer this question, in this project, we examine how taking photos during an experience affects enjoyment of that experience, both immediately and after a delay, even without revisiting the pictures taken.

In two field and four lab experiments, we find that taking photos can actually heighten engagement in experiences, which for positive experiences results in increased enjoyment. This is the case even when an experience is visually homogenous, and is not affected by the number of photos taken. For negative experiences, however, the enhanced engagement that results from taking photos worsens the experience. We also manipulate the extent to which photo-taking interferes with the experience, identifying situations where trying to capture experiences reduces engagement and lowers enjoyment.

To examine the causal effect of photo-taking in the field, we conducted an experiment with 188 paid volunteers who took part in one of eight 30 minute long sightseeing double-decker bus tours in a major US city. Half of the bus tours were assigned to the photo condition. All participants in the tours were given cameras, taking on average 35 pictures. Participants in the control, no-camera tours did not have any means to take photos. Interestingly those who had cameras were more engaged in the experience and subsequently enjoyed the experience more than those who did not take pictures.

Replicating these findings in another field study, regular visitors to a museum (N=100) were randomly assigned to either the photo taking condition, asking them to take at least 15 photos during the exhibit, or the control condition, asking them to view the gallery as they normally would. At the gallery exit and again a week later, participants reported how much they enjoyed the experience and how engaged they felt. Again, we find that taking photos caused people to enjoy their museum experience more, both immediately after the experience and one week later. Moreover, this occurred because people felt more engaged with the experience when capturing the experience in photos.

In order to further isolate the engagement based mechanism in the lab we manipulate photo-taking using a unique computer interface that presents participants with first-person videos of real-life experiences (e.g., travel adventures, concerts), and asks them to imagine actually experiencing the events themselves. Those in photo-taking conditions can take pictures of the experience using their mouse. In Studies 3 and 4, we replicate our findings from the field with this unique lab paradigm and test for the engagement mechanism through mediation. Study 3 also examines the effect of photo-taking over time. Study 4 replicates the effect of photo taking across different types of experiences (visually-rich and visually-homogenous). In the final two studies, we further explore the mechanism by directly manipulating aspects of the photo-taking environment that may affect the engagement process, and test for moderation on enjoyment. In Study 5, we manipulate the extent to which photo-taking interferes with the experience. We again find that non-intrusive photo-taking increases engagement and enjoyment in an experience. However, increasing the extent to which the act of taking photos interferes with the experience reduces engagement and enjoyment. In Study 6, we show that photo-taking can have different effects on positive versus

negative experiences. While we replicate our findings that taking pictures heightens enjoyment when the experience is positive, photo-taking has the opposite effect when the experience is negative.

To the best of our knowledge, our research is the first to examine how capturing an experience by taking photos affects the enjoyment of experiences. While there are many more related questions that warrant future research, we hope our current investigation provides a first step into greater understanding of this important consumer behavior.

For more information contact: [kdiehl@usc.edu](mailto:kdiehl@usc.edu)

## ***Individual Papers: Self and other-perspective in gifting, consuming, and advising***

### ***All I Want Is to Make You Smile – Why Gift Givers Don't Give What Recipients Want The Most?***

Adelle Yang, The University of Chicago, USA\*

Oleg Urminsky, The University of Chicago, USA

Gift givers want to make their recipients happy, yet achieving this goal appears perplexingly difficult. While gift expenses amount to 10% of the retail market in the United States, nearly \$50 billion worth of gifts end up returned or exchanged (CNBC 2013).

Why do gifts often mismatch recipient preferences? Prior research has primarily focused on givers' difficulty in predicting recipients' preferences (e.g., Waldfogel 1993, Baskin et al. 2014), emphasizing the givers' motive to match recipients' preference and maximize recipients' welfare.

We believe this view is incomplete, and introduce a novel approach to understanding gift-giving decisions. We propose that givers' motive to make their recipients happy is better understood as a desire to induce recipients' positive affective reactions, such as a smile, instead of a goal to maximize recipient welfare by matching recipients' preferences. Importantly, givers' "smile-seeking" motive yields a common and inevitable discrepancy between gift choices and recipients' preferences, because attributes that promote recipient happiness upon gift reception are often not the same attributes that augment recipients' overall welfare

We propose that some attributes (i.e., visceral attributes, such as visual pleasantness, temperature and temporal immediacy) tend to elicit immediate and transient affective reactions; other attributes (i.e., cerebral attributes, such as functionality, durability and monetary value) tend to yield long-term and stable cognitive evaluations, and contribute to recipients' overall welfare without eliciting affective reactions.

Therefore, givers' smile-seeking motive and recipients' value-seeking motive often translates into a giver-recipient preference discrepancy. We predict givers will choose to give viscerally superior gifts, whether hedonic or utilitarian. By contrast, recipients will prefer to receive gifts with more balanced visceral and cerebral attributes that bring higher overall benefits. For example, between a bouquet of fresh-cut flowers with voluptuous full blooms and a bonsai that produces serial blossoms in the future, givers would prefer the former whereas recipients would prefer the latter. Moreover, we predict that when recipients' affective reactions are not available, givers' preference for the visceral gifts will be attenuated. Furthermore, our theorization also predicts that for post-gift consequences, givers will derive more happiness from the recipients' immediate affective reactions than from the recipients' long-term satisfaction. In our studies, while testing these key predictions of our framework, we also rule out alternative explanations, including mistaken beliefs about recipient preferences, discrepancies in guilt and ease of justification between givers and recipients, and psychological distance.

In Study 1 (N = 155), participants made real choices between thank-you gift cards, either to give to a friend that they would meet in person soon, or to receive as a gift from the experimenter. Participants chose between a lower-valued but immediate gift card (visceral card) and a higher-valued but delayed gift card (cerebral card). A pilot study (N = 55) confirmed that the visceral card evoked more positive affective reactions, although the cerebral card was evaluated more positively ( $p < .05$ .) We found participants were more likely to give the visceral card (51%) than they were to choose to receive it (28%,  $p < .01$ ). We replicated this preference discrepancy between paired givers and recipients, using a variety of common gift items involving similar inter-temporal tradeoffs in follow-up studies (Studies 2-4).

In Study 5 (N = 139) we tested givers' and recipients' preferences for generally more visceral gifts (e.g., those that are more visually appealing or more immediately usable) and more cerebral gifts (e.g., those that more functional or durable) in a gift registry scenario. Even though the recipients' preferences were presented directly to givers via the registry, we replicated the same giver-recipient preference discrepancy ( $ps < .01$ ). These results rule out major alternative accounts, including prediction-errors and evaluation-mode asymmetry.

Next, we manipulated whether the giver could observe the recipients' affective reactions when receiving the gift, and found givers' preference for the visceral gift was attenuated when recipients' affective reactions were either unavailable (Study 6, N = 135,  $p < .05$ ) or delayed (Study 7, N = 332, interaction  $p < .05$ ). These results directly support the smile-seeking account and rule out completing accounts.

In Study 8 (N = 295), we directly measured the proposed processes, using a variety of common gift options on Valentine's Day. In addition to replicating the discrepancy ( $p = .001$ ), we found a moderated mediation. While the visceral ratings of the options predicted both givers' and recipients' preferences ( $ps < .01$ ), cerebral ratings only predicted recipients' preferences ( $p < .05$ ) but not givers' (n.s.). These results further substantiate our framework.

Last, we investigated post-giving consequences. In a longitudinal field survey before and after Christmas (Study 9, N = 111), we found givers' enjoyment of giving was predicted by the recipients' immediate affective reactions ( $p < .01$ ) rather than recipients' long-term satisfaction (n.s.) when both were observed. In Study 10 (N = 81), we asked participants to recall their favorite and least favorite gifts, either that they had given or that they had received in the past year. Givers' favorite gifts scored high on the visceral scale but low on the cerebral scale, while their least favorite gifts were the opposite. However, recipients' favorite gifts scored high on the cerebral scale and low on the visceral scale, while their least favorite gifts scored low on both visceral and cerebral scales.

Overall, we found that 1) although people prefer to receive gifts with balanced visceral and cerebral attributes, they focus on the visceral attributes when giving gifts to others, even when they are aware of recipients' discrepant preferences; 2) this is because visceral attributes are more likely to elicit affective reactions, and givers prioritize good social interaction over maximizing recipients' benefits; and 3) although recipients are more likely to appreciate and remember cerebral gifts as their favorite gifts, givers instead enjoy giving visceral gifts more because of the positive affective reactions they induced.

These findings highlight an unrecognized role of anticipated affective reactions in interpersonal decision-making, and provide a novel perspective to understand social exchange behaviors. We will discuss the implications of our framework for an array of interesting marketing phenomena.

For more information contact: [oleg.urminsky@chicagobooth.edu](mailto:oleg.urminsky@chicagobooth.edu)

## ***Better Gifting Through ‘Companionizing’: How to Improve Gifts and Create Stronger Bonds with Gift-Recipients***

Evan Polman, University of Wisconsin-Madison, USA\*

Sam Maglio, University of Toronto, Canada

When it comes to choosing gifts, previous research has examined the economic, social, and emotional challenges that consumers face when deciding what to give others. In summary, givers often experience ambivalent feelings: Many relish the opportunity to buy gifts because gift-giving offers a means by which to build stronger bonds with one’s closest peers (Camerer 1988; Mauss 1925), yet people are often inaccurate in what they think their peers will like receiving (Baskin, Wakslak, Trope, and Novemsky 2014; Cavanaugh, Gino, and Fitzsimons 2015; Gino and Flynn 2011; Steffel and LeBoeuf 2014; Ward and Broniarczyk 2011). Typically, such deficits are discussed in terms of givers struggling to take the perspective of recipients (Zhang and Epley 2012) – indeed, much research has found that people are susceptible to egocentrism, social projection, and multiple attribution errors (Ross 1977).

In this article, however, we take a different approach to this topic. Rather than examining the effects of givers’ egocentrism dampening recipients’ satisfaction, we offer a theoretically- and practically-relevant means to enhance gifts. In so doing, we develop links between gift-giving and the heretofore separate literature streams on interpersonal closeness and a special type of sharing that we refer to as “companionizing” that describes owning the same product as others.

For example, similar to how consumers can share the same tastes or preferences as others, consumers can share the same sweater by owning a same but separate sweater (this is in contrast to sharing the same product and jointly consuming it with others). Research on this type of sharing has focused primarily on how choices consumers make are influenced by whether consumers want to have the same items or different items as others (Berger and Heath 2007, 2008; Escalas and Bettman 2005; Wang, Zhu, and Shiv 2012; White and Dahl 2007). As a general pattern, this research shows that consumers are motivated to buy or consume items that are associated with desirable others – e.g., items that are the same as desirable others’ items – and avoid items that are associated with undesirable others. In support, Belk (2010) states that sharing “goes hand in hand with trust and bonding” (717), and it is for this reason that, when consumers want to fit in with others, they appropriate the same items as those others (Mead, Baumeister, Stillman, Rawn, and Vohs 2011). Similarly, it is for this same reason that when consumers want to stand out from others, they deliberately avoid buying the same items as those others (Berger and Heath 2007, 2008). These examples show that sharing creates closeness – from sharing attitudes, birthdays, or goals with others, people feel closer to those similar others (Miller et al. 1998).

Applying these insights to gift-giving, we refer to gifts as “companionized” when recipients come to perceive their gifts as evidence of sharing a bond with gift givers. Specifically we refer to sharing a bond as resulting of sharing something in common with others.

Researchers in anthropology, sociology, psychology, and consumer culture theory have long theorized on the bonds and solidarity that gift-giving creates. However, despite the extent of this literature, no investigation in this tradition has empirically tested how to simply make gifts better. We predict that companionizing a gift – where a giver gives something that she also purchases for herself – foster a feeling of closeness that increases recipients’ likeability of their gifts, and tested this in four studies.

In study 1, we investigated participants’ valuation of 10 gifts. We randomly presented participants with one of two conditions: the companionized condition, which accompanied this message, “Imagine you receive a gift for a special occasion. You open the present, and inside is a new [gift], with a card that reads, “I hope you like the [gift] -- I got myself the same [gift] too!” and the control condition, which accompanied this message, “Imagine you receive a gift for a special occasion. You open the present, and inside is a new [gift], with a card that reads, “I hope you like the [gift]!”. Then, participants rated the gift on scales of likability, thoughtfulness, and consideredness (we collapsed these items into one item, valuation;  $\alpha=.89$ ). We found that participants in the companionized condition valued their gift more ( $M=4.87$ ,  $SD=1.38$ ) than participants in the control condition ( $M=4.56$ ,  $SD=1.56$ ),  $F(1, 9.87)=10.60$ ,  $p=.009$ .



In study 2, we ruled out an alternative explanation – that companionized gifts signal quality (e.g., “If she bought the widget for herself too, it must be a good widget!”). The procedure was the same as study 1, except that we used different gifts and added a condition in which the product was explicitly stated as being of high quality. Post hoc analyses revealed that participants in the companionized condition valued their gift more ( $M=4.55$ ,  $SD=1.42$ ) than participants in both the control ( $M=4.22$ ,  $SD=1.52$ ) and high-quality conditions ( $M=4.05$ ,  $SD=1.49$ ),  $ps<.054$ .

Study 3 tested two moderators to examine the effects of companionizing a gift when that gift has been fleeced of its relational or temporal bonds. The first examined a gift companionized by someone only tangentially close to the recipient (the giver’s sister), and the second examined a gift companionized at a time different from the time of receipt (a year ago). Post hoc analyses revealed that participants in the companionized condition valued their gift more ( $M=5.01$ ,  $SD=1.32$ ) than participants in the control condition ( $M=4.68$ ,  $SD=1.48$ ), sister condition ( $M=4.42$ ,  $SD=1.53$ ), and last year condition ( $M=4.72$ ,  $SD=1.41$ ),  $ps<.009$ .

Study 4 measured not only valuation of gifts but also the social bond recipients feel toward givers. Recipients felt a greater bond with givers when they received companionized (versus non-companionized) gifts, which in turn increased the valuation of their gifts. A mediational analysis confirmed that the former accounted for the latter.

In sum, our research provides a psychological inroad to the larger issue of sentimental value – and seeks to make two contributions: one about practice and another about theory. In practical terms, our research addresses a perennial challenge to choosing gifts. In theoretical terms, we develop links between the separate research streams of gift-giving, choosing-for-others, sharing, and interpersonal closeness.

For more information contact: [epolman@bus.wisc.edu](mailto:epolman@bus.wisc.edu)

### ***Consuming Together Makes the Heart Grow Fonder: Selfishness and Sacrifice in Joint Consumption Decisions***

Ximena Garcia-Rada, Harvard Business School, USA\*

Lalin Anik, University of Virginia, USA

Dan Ariely, Duke University, USA

If you were to choose a dish to share for a romantic Friday night dinner date, would you pick your favorite food that your partner doesn’t like over a dish that you don’t care for but your partner loves? Or would you pick something in between? Such decisions involve a myriad of considerations: who prefers what, who picked the food last time, how serious is the relationship, whether the relationship has a future. More importantly, how you handle this decision will determine your partner’s reaction, the mood for Friday evening, the flow of the weekend, and whether your partner will finally agree to go to that movie that you have been wanting to see.

Joint consumption situations are ubiquitous, from choosing food to share with a colleague to picking a movie to watch with a friend, or to choosing a vacation destination to enjoy with a romantic partner. Other decisions, such as the purchase of an automobile, an appliance, or home furnishings also involve consumption that is shared with others, even though these decisions can be made individually. In fact, most of our decisions involve others in one form or another.

The majority of work on consumer decision-making has focused on how individuals make decisions in light of their personal attitudes, beliefs, and preferences. To understand how consumers make decisions in close relationships, examinations need to include others’ preferences. Increasingly more research looks at how others influence individuals’ decisions. For example, work on choosing on behalf

of others showed that the choices individuals make for others often differ from the choices they make for themselves. However, making choices on behalf of others is very different than choosing and consuming with someone else; although individuals' preferences and beliefs still play a role (Laran 2010; Liu, Campbell, Fitzsimons and Fitzsimons 2013; Chang, Chuang, Cheng, and Huang 2012) when choosing on behalf of others decision-makers are impacted by their preferences to a lesser extent or not at all. Joint consumption occasions, on the other hand, are a unique phenomenon because in these situations the preferences of the other person are very salient.

We propose that when individuals make choices for joint consumption occasions, their choices differ from those they would make for separate consumption situations. Furthermore, we suggest that joint consumption decisions are distinct because the decider and the recipient share the consumption experience (consuming the choice together) and the same outcome (the choice). Our theory extends the framework introduced by Simpson, Griskevicius and Rothman (2012) to understand better individual decisions for joint consumption situations. Simpson and colleagues suggested two types of effects in consumer decision-making processes: individual actor effects (e.g., how preferences for the self impact the choice) and partner effects (e.g. how preferences of the other person influence the individual's choice). Building on this framework, Gorlin and Dhar (2012) proposed four decision-consumption episodes: joint decision and joint consumption, single decision and joint consumption, joint decision and single consumption, and single decision and single consumption. We closely examine the second episode proposed by Gorlin and Dhar: single decisions for joint consumption situations and uncover the motivations behind these choices.

In the present research, we further our understanding on how consumers make single decisions for joint consumption situations; specifically, we examined how individuals made food decisions to be consumed with their romantic partner. We introduce a methodology involving an updated economic game: the partner game. This game resembles the dictator game since only one person decides how much, if any, of a resource to share with the other person. In the partner game, individuals allocate units of utility for food options to be shared with their partner, rather than money, and in all cases they face a conflict between their own preferences and their partner's preferences. Across several studies, we manipulated the utility distributions for both the self and the other person as well as consumption conditions to assess how these changes impact the decisions consumers make for joint consumption situations.

Across six studies, we examine how individuals in romantic relationships make decisions for joint consumption situations. In Study 1, we explore how people share food with their romantic partner and pit this against sharing money with a romantic partner versus a stranger. In Study 2, we show that individuals make more altruistic choices when they will consume jointly with their partner rather than separately. In Study 3, we test the mechanism and show that the anticipated affective responses from the partner will impact consumers' choices. Finally, in studies 4-6, we explore potential conditions that influence levels of sacrifice: the existence of extreme conflicts, the availability of a fair option, the nature of the occasion (one time vs. recurring) and the nature of the choice (unique vs. regular).

In sum, we present a thorough investigation of individual decisions in joint consumption situations involving others' preferences, the consumption of the outcome and the experience. We contribute to the existing work on consumer decision-making in close relationships as well as to the work examining decisions made on behalf of others. These two streams of research recognize and highlight the importance of studying individual choices that incorporate the preferences, attitudes and beliefs of others. In our work, we focus on single decisions made for joint consumption, as another example of a situation when others impact consumers' choices. However, the uniqueness of the episode "single decision and joint consumption" is that both parties consume the outcome and the experience, but only one person handles choosing what both individuals will share. Finally, we take a step toward bridging the gap between individual decisions for consumption alone and with others, and we hope our work has the potential to benefit researchers and practitioners who are interested in decisions in the context of established relationships.

For more information contact: [xgarciarada@hbs.edu](mailto:xgarciarada@hbs.edu)

## *Endorsing Help For Others That You Oppose For Yourself: Mind Perception Guides Support for Paternalism*

Juliana Schroeder, University of California Berkeley, USA\*

Adam Waytz, Northwestern University, USA

Nicholas Epley, University of Chicago, USA

As members of a highly interdependent species, people not only try to improve their own well-being, they also try to improve others' well-being. People can choose to help themselves and others in more or less paternalistic ways. For example, providing or banning specific goods is more paternalistic because it restricts the recipient's choice compared to giving cash or information. We propose that support for paternalistic aid depends in part on people's subtle inferences about the mental capacities—self-control and rationality—of those being helped.

Our proposal provides an explanation for why paternalistic aid is popular when giving to others but unpopular among those they are targeted to help (e.g., Conly, 2013; Hill, 2006; Mill, 1869). People tend to believe that others have weaker mental capacities than the self, at least in part because they experience their own minds directly but observe others' minds indirectly (Epley & Waytz, 2010; Haslam et al., 2005; Pronin, 2009; Waytz, Schroeder, & Epley, 2014). We propose that this difference in how people judge their own versus others' minds accounts for self-other differences in support for paternalism. Although other factors may also influence support for paternalism (e.g., ideology, need for autonomy; Costa & Kahn, 2013; Jung, Mellers, & Baron, 2015; Tannenbaum & Ditto, 2015), these do not predict a self-other difference in support for paternalism.

We tested our hypothesis in Experiment 1 by asking participants to choose the most effective policies either for themselves or for an "average citizen." Participants made five sets of choices (avoiding unhealthy foods, avoiding credit card debt, not misusing a gun, saving for retirement, and avoiding mortgage debt) each with two options: a more or less paternalistic policy. For example, participants could either select a policy that banned unhealthy foods (more paternalistic) or provided information on calorie counts (less paternalistic). They also reported how capable they (and the average citizen) were of achieving each goal. As expected, participants were more likely to select paternalistic policies for the average citizen than for themselves, and this was fully mediated by perceived capacity to exert self-control.

Experiments 2-4 next tested how beliefs about the mental capacities of others in need affected paternalistic aid. In Experiment 2, the greater mental capacity that participants believed recipients of charity aid had, the more likely they were to donate their own earnings to a less paternalistic charity (GiveDirectly, which gives direct cash donations to recipients) compared to a more paternalistic charity (Red Cross) or no charity. In Experiments 3 and 4 we manipulated mental capacity beliefs about different groups of people (e.g., Kenyans), and again measured subsequent donations to more or less paternalistic charities. Donors who read information framed to make recipients seem less (vs. more) mentally capable were more likely to donate to the more paternalistic charity. Although beliefs about recipients' mental capacities predicted to which charity they gave, only beliefs about recipients' magnitude of need predicted how much they gave.

Finally, we tested whether making people aware of their own mental shortcomings will increase support for paternalistic approaches to help themselves (Experiment 5). We asked participants to evaluate the effectiveness of four policies for reducing obesity either just before or just after a major cultural temptation for overeating: Thanksgiving dinner. Two of these policies were relatively paternalistic, and two were relatively agentic. Consistent with our hypothesis, participants thought that paternalistic approaches to obesity are more effective just after their Thanksgiving dinner than just before it, because they recognized more weakness in their own self-control after (vs. before) Thanksgiving.

Across five experiments examining beliefs about one's own and others' mental capacities, participants consistently preferred to provide paternalistic aid to those who seemed to have less mental capacity: other people (Experiments 1-2), those described as having diminished mental capacities (Experiments 2-4), or oneself after experiencing a moment of mental weakness (Experiment 5). Our findings have important theoretical and practical implications.

Theoretically, these results highlight how subtle inferences about others' mental capacities can affect social life. In particular, our research suggests that the subtle tendency to dehumanize others (Haslam & Loughnan, 2014)—to think of their mental capacities as relatively diminished compared to one's own (Pronin, 2009; Waytz et al., 2014)—matters because it can affect how people attempt to help each other. Thinking of others as being somewhat mentally incapable, perhaps more like children than like adults, can lead people to treat others as relatively childlike as well, preferring a more paternalistic approach to helping others rather than a more agentic approach that enables others to help themselves.

Practically, these results are important for policy makers, charitable organizations, and any others who are trying to improve people's lives through different sources of aid. Decisions about how to help others should be guided by empirical evidence about the actual effectiveness of particular interventions. Our experiments, however, demonstrate that these decisions in the absence of evidence may actually be guided by a less useful source: potentially mistaken inferences about the minds of those being helped. Those who design policy, offer aid, or try to help those in need would be wise to remember that good intentions may be guided by mistaken assumptions about the very people whose lives they are trying to improve.

For more information contact: [jschroeder@haas.berkeley.edu](mailto:jschroeder@haas.berkeley.edu)

## ***Individual Papers: Malleable Attitudes***

### ***Positively Useless: Irrelevant Negative Information Enhances Positive Impressions***

Meyrav Shoham, Technion - Israel Institute of Technology, Israel\*

Sarit Moldovan, The Open University of Israel

Yael Steinhart, Tel Aviv University, Israel

In this research, we examine the impact of irrelevant information, focusing on unhelpful online reviews. Positive and helpful user reviews are known to increase evaluations and sales (e.g. Zhu & Zhang, 2010). Negative reviews can increase product awareness (Berger, Sorensen and Rasmussen, 2010) and negative information can be beneficial in two-sided communications and reviews (Eisend, 2006; Schlosser, 2011). Less is known, however, about the effect of irrelevant information in the context of word of mouth and reviews. We suggest that unhelpful reviews can have a *positive* effect – if they appear to be *negative*.

Online reviews are usually written by strangers, making it difficult to assess their accuracy and relevance (Schlosser, 2011). We propose that when consumers are uncertain of their choice, they turn to the small number of available negative reviews, because negative information is often perceived as more diagnostic and valuable (e.g. Rozin & Royzman, 2001). Irrelevant negative reviews do not provide the expected diagnostic value, so they are perceived as unhelpful; yet they lead consumers to conclude that the product is a good one, as there is nothing truly negative to say about it. This enhances the impact of the positive information and leads to improved product evaluations.

Irrelevant information can have positive effects if it is valued by consumers (Carpenter, Glazer & Nakamoto, 1994), but can also *reduce* product evaluations if it is not valued (Brown & Carpenter, 2000) and may dilute the impact of more relevant information (Meyvis & Janiszewski, 2002). We build on this research and suggest that the way irrelevant information is presented may determine its impact: if it is presented as *negative* (e.g., a review with a 1-star rating), it may lead to higher product evaluations and purchase intentions.

We thus hypothesize that evaluations will be more positive when a review set includes an unhelpful review that is framed negatively rather than positively, and compared to sets without an unhelpful review. This hypothesis is confirmed in a series of five studies in which we also examine the process underlying the effect and rule out alternative explanations.

In study 1, participants evaluated an espresso machine and were assigned to one of three conditions: a set of four positive reviews only (control) or the same reviews with an additional unhelpful review, presented with either a positive or a negative rating (1 or 5 stars). This review provided general information about coffee that was irrelevant to evaluating the specific espresso machine. As predicted, evaluations differed across conditions ( $F(2, 74) = 3.56, p < .05$ ). They were significantly higher when the review set included a *negatively* framed unhelpful review ( $M = 5.81$ ) compared to the positive frame ( $M = 5.04, F(2, 74) = 4.86, p < .05$ ) and control conditions ( $M = 5.0, F(2, 74) = 5.73, p < .01$ ). The latter two conditions did not differ significantly ( $F < 1$ ).

Study 2 showed that the effect is moderated by familiarity with the reviewers. The student participants read reviews of an elective course, supposedly provided by either friends or strangers. Once again, there were four identical positive reviews and one unhelpful review, presented either positively ("recommended") or negatively ("not recommended"). The review provided information about the reviewer's interests that was irrelevant for evaluating the course itself. The expected 2-way interaction ( $F(1,91) = 4.34, p < .05$ ) emerged: when the reviewers were strangers, evaluations were significantly higher if the review set included a negatively framed unhelpful review ( $M = 5.96$ ) rather than a positive one ( $M = 5.08, F(1, 91) = 10.48, p < .01$ ). When the reviewers were friends, unhelpful review presentation did not impact evaluations ( $F < 1$ ). Bootstrapping analysis showed that this effect was mediated by the greater perceived value of the reviews.

Study 3 ruled out two-sided persuasion as an alternative explanation for the effect, showing that it stems from a lack of negative diagnostic value rather than the mere inclusion of negative information. We included a condition in which the unhelpful review was replaced by a weak but helpful negative review. As expected, we found a significant difference in evaluations of a camera ( $F(2,100) = 4.71, p < .05$ ). Evaluations were significantly higher in the negative-unhelpful condition ( $M = 5.76$ ) than the positive-unhelpful condition ( $M = 5.15, F(2, 100) = 4.94, p < .05$ ) and the weak-negative condition ( $M=4.97, F(2, 100) = 8.74, p < .01$ ), confirming that our effect differs from two-sided persuasion.

Study 4 showed that the effect occurs when a negative review is personally irrelevant but not if it is relevant (and thus, truly negative). Participants read reviews of running shoes comprising either four positive reviews only or the same reviews with an additional one-star review, which contained information relevant for women but not for men. The expected gender  $\times$  review set interaction was found ( $F(1, 80) = 10.39, p < .01$ ). Men were willing to pay more for the shoes when their review set included the additional (irrelevant) review ( $M = 86.97, SD = 27.50$ ) compared to when they saw only the four positive reviews ( $M = 71.90, SD = 17.86; F(1, 80) = 5.23, p < .05$ ). Women were willing to pay less when the additional (relevant) review was included ( $M = 74.70, SD=19.76$ ) than when it was not ( $M = 89.68, SD = 19.59; F(1, 80) = 5.16, p < .05$ ).

An additional study extended the effect to actual choices: given a choice between two brands of artisanal soap, choice likelihood of each brand was greater when its review set included an unhelpful negative review ( $\chi^2(1) = 4.40, \text{Cramer's } V = .285, p < .05$ ).

The findings demonstrate that unhelpful reviews can boost positive impressions – if they are presented as being negative. This effect is driven by the lack of negative diagnosticity, rather than the mere addition of negative information. While consumers and sellers may find some types of reviews and information unhelpful and irrelevant, these can nonetheless prove quite relevant when it comes to evaluations and purchase decisions.

For more information contact: meyravs@campus.technion.ac.il

### ***How Reminders of Sunlight Affect Men's Attitude towards Luxury Products***

Mohammed El Hazzouri, Mount Royal University, Canada\*

Kelley Main, University of Manitoba, Canada

Donya Shabgard, University of Manitoba, Canada

Throughout time, people have been interested in the conspicuous consumption of status products (Veblen, 1889/2007). Previous research has shown that consumers purchase luxury products in order to express personal values (Richins, 1994), to mimic other consumers (Mandel, Petrova, & Cialdina, 2006), and to boost their ego when under threat (Sivanathan & Pettit, 2010). An evolutionary perspective suggests different motives, females seek mates who have an abundance of economic resources and can provide for them and their children (Buss & Schmitt, 1993). Thus, for males using luxury products is a common method utilized to signal their status and attract females (Schmitt & Buss, 1996). Thus, males in comparison to females spend more on luxury products when motivated by mating goals (Griskevicius, Tybur, Sundie, Cialdini, Miller, & Kenrick, 2007; Saad, 2007). In this research, we investigate how a nature related variable associated with human mating can influence men's preference for luxury products.

There is a relationship between the seasons and human conception (Roenneberg & Aschoff, 1990) with a peak during the summer months (Lam & Miron, 1994). The correlation of daylight to human reproduction has been attributed to several factors including the decreased level of the hormone melatonin (associated with decreased sexual competence) during seasons of longer daylight hours (Reiter, 1998) and the increased level of vitamin D (Rojansky, 1992), which has a positive influence on conception (Jensen, 2014).

### **Present Research**

In three studies we investigate how reminders of sunlight affect male consumers' preference for luxury products.

#### **Study 1**

In this study we tested whether daylight saving affects male's preference towards luxury products. It was expected that directly after daylight saving goes into effect, men's preference for luxury products increases because daylight saving may remind them of longer days and more sunshine exposure. One hundred twenty male participants successfully completed the experiment either one day before ( $n=57$ ) or one day after ( $n=63$ ) daylight saving went into effect. Participants were presented with two similar looking advertisements for a luxury car (Lexus) and a non-luxury car (KIA) and were asked to indicate their product preferences (100 points allocated between the two brands). Participants also reported their mood (PANAS scale; Watson, Clark, & Tellegen 1988), and demographic variables.

Daylight savings did not have an influence on either positive or negative mood. However, as predicted participants who took the survey one day after (before) daylight savings rated the luxury (non-luxury) car higher (lower), (Lexus:  $M_{\text{Before}}=66.72$ ,  $M_{\text{After}}=75.32$ ; KIA:  $M_{\text{Before}}=33.28$ ,  $M_{\text{After}}=24.68$ ;  $F(1,118)=3.94$ ,  $p<.05$ ).

The effect of sunlight seasonality on humans should be more prominent for those living far away from the equator than those living near the equator; those who live far north or south witness a more extreme difference in the length of daylight between winter and summer than those closer to the equator. Thus for our participants who reside in the USA, those who live in the north should be more affected by daylight savings than those who live in the south. To test this, we classified participants into residents of the northern or southern states (N<sub>North</sub>= 58 vs. N<sub>South</sub>=62). Planned comparisons revealed that daylight savings had a significant effect on brand preferences for those living in the northern states (Lexus: M<sub>Before</sub>=65.26, M<sub>After</sub>=78.37; KIA: M<sub>Before</sub>=34.74, M<sub>After</sub>=21.63;  $F(1,116)=4.39, p<.05$ ) and no significant effect for those living in the southern states ( $P>.4$ ).

## Study 2

In study two we tested whether reminders of sunlight affect male's preference for luxury brands (high end brand names). Study 2 was a 2(sunlight reminder: no vs. yes) x 2(gender: male vs. female) between participants design. One hundred and five participants (52.4% female; M<sub>Age</sub>=20.55) were asked to arrange scrambled words (related or not related to sunlight) into sentences and then completed a questionnaire assessing mood and preference for high-end brands (rating the importance of having high-end brands – couch, laptop bag, etc.). One participant was excluded from the analysis for reporting extreme values ( $Z>2.5$ ).

Men in the sunlight (no sunlight) condition expressed significantly higher (lower) preferences for the high-end brands (M<sub>No sunlight</sub>=2.98, M<sub>Sunlight</sub>=3.82;  $F(1,100)=5.23, p<.05$ ). As expected this effect did not show for female participants (M<sub>No sunlight</sub>=3.77, M<sub>Sunlight</sub>=3.88;  $F(1,100)=.10, p>.7$ ). Results did not show significant interactions regarding mood ( $p>.1$ ). There was only a marginally significant effect of sunlight on female's negative mood (M<sub>No</sub>=2.91, M<sub>Yes</sub>=2.33;  $F(1,100)=3.61, p=.06$ ).

## Study 3

In this study, we tested whether sexual motivation mediates the effect of sunlight on preference for luxury products. Fifty four male participants viewed an advertisement for Hugo Boss (luxury clothing brand) with either a sunny sky (sunlight reminder: yes) or a dark sky (sunlight reminder: no). The participants then completed a questionnaire which assessed their attitudes towards the brand (4 items on a 7-point bipolar scale- good: bad, etc. ( $\alpha=.95$ )). In order to test sexual motivation we presented participants with three sexualized images of heterosexual couples and asked them to report their feelings towards the models (7-point bipolar scale – unattractive: attractive, etc. ( $\alpha=.91$ )). Three participants were excluded from the analysis for reporting extreme values ( $z>2.5$ ).

Men's attitude towards the brand and their sexual motivation were higher (lower) in the sunlight condition (no sunlight) (Attitude: M<sub>No</sub>=4.96, M<sub>Yes</sub>=5.74;  $F(1,49)=4.5, p<.05$ ; Sexual motivation: M<sub>No</sub>=6.12, M<sub>Yes</sub>=6.60;  $F(1,49)=5.54, p<.05$ ). Mediation analysis (Process Model 4; Hayes, 2013) showed that sexual motivation mediated the relationship between sunlight and attitudes towards the luxury (CI: 0.0831 to 1.0208).

## Conclusion

Our studies provide evidence that when reminded of sunlight males (but not females) express more favorable attitudes towards luxury products. This effect is mediated by sexual motivation. This research contributes to research the evolutionary psychology literature as we have established that reminders of sunlight can trigger sexual motivation. This research also contributes to consumer literature that has shown that sunlight influences mood and general sales (Murray et al., 2010); our results show a positive influence of sunlight on luxury products specifically. Since our findings indicate that reminders of sunlight can activate sexual motivation, we suggest that such reminders may successfully replace sexual images in advertising that are usually used to increase sales of luxury products.

For more information contact: melhazzouri@mtroyal.ca

## ***The echo effect: Sharing one's opinion about a product can influence one's own attitudes***

Ishani Banerji, University of Texas at San Antonio, USA\*

Shuoyang Zhang, University of St. Thomas, USA

Eliot Smith, Indiana University, USA

Word-of-mouth (WOM) is a pivotal concept in the marketing research literature. Prior research has demonstrated the effects of WOM on product adoption (Arndt 1967), switching behavior (Wangenheim and Bayon 2004), and consumer attitudes (Bone 1995). However, the vast majority of previous research on WOM effects has focused on consumers as receivers of WOM messages (Moore 2012).

Complementary to this receiver-centric approach, there is a small but growing body of research exploring WOM communicators—i.e., consumers who share their opinion about the product with others (see Berger 2014 for a review). The current research adds to this burgeoning literature by examining how WOM communicators might be influenced as a result of their communication.

In particular, we focus on situations in which the WOM communicator is asked to share their opinion of a product with a recipient who has a pre-existing opinion of the product in our first two studies. Previous research indicates that individuals accommodate their audience's characteristics (Glucksberg et al. 1975). Thus, they tend to share more positive (negative) information about a target whom they know the audience likes (dislikes) (Higgins and Rholes 1978) and this can lead to corresponding changes in their own attitude and recall of the target (Echterhoff, Higgins and Groll 2005). We expect a similar pattern to emerge in the context of WOM communications: a communicator will share more positive WOM with a recipient known to like the product compared to a recipient known to dislike the product. Furthermore, adjusting one's WOM in this manner will lead to a corresponding shift in the communicator's own attitudes with more positive attitudes toward the product occurring when the recipient likes the product than when the recipient dislikes the product. We call this the echo effect and test it in a series of experiments described briefly below.

Experiment 1 establishes the effect and provides initial evidence for the mediating mechanism. Participants were asked to initially evaluate one of three products. Then, the recipient attitude manipulation was introduced: participants learned that their friend liked or disliked the product and was considering purchasing it. However, they wanted to know their friend's (i.e., the participant's) opinion of it before deciding. Participants then wrote a WOM message to the friend, completed a filler task, and finally evaluated the product again. Coding participants' WOM messages revealed that they were more positive when the friend liked the product compared to when they disliked it (figure 1). Moreover, participants' own attitude toward the product became more positive when the friend liked the product (figure 1), and this change was mediated by the positivity of their WOM message (figure 2).

Experiment 2 replicates the effect and finds evidence for changes in the WOM communicator's recall of the product as well as their attitudes toward the product. The methodology for the second experiment was very similar to the first experiment with three exceptions: participants simultaneously received the product information and learned about their friend's attitude, participants' attitude was measured only once at the end of the study, and a measure of product recall was included (open-ended question). We replicate the results from Study 1: WOM communicators shared more positive content with someone who had a pre-existing positive attitude toward the product compared to someone who had a pre-existing negative attitude, and this mediated the extent to which their own attitude toward the product shifted. Moreover, we find that participants' recall of the product was more positive (negative) after communicating with someone who liked (disliked) the product. Thus, communicators don't just like the product more, but also remember it more positively, after sharing WOM with a recipient who likes the product.

Thus far, participants were provided with a clear indicator of their friend's attitude in accordance with prior research. However, it remains unclear whether the communicator has to be explicitly informed of the recipient's pre-existing attitude. We predicted that if someone were considering purchasing a product, then the WOM communicator would assume that they hold a positive attitude toward it



and act accordingly. To explore this, experiment 3 used the same procedure as experiment 2, but with one crucial difference. Participants received a message from the friend that merely asked for their opinion, but without any explicit indication of whether the friend liked or disliked the product. In addition to writing the WOM message and reporting their attitude toward the product, participants also rated what they believed their friend’s attitude toward the product to be and completed a purchase likelihood measure. As expected, the more positive the friend’s attitude was (believed to be), the more positive the WOM shared with the friend. This in turn led the participant to hold more positive attitudes toward the product, and be more likely to purchase the product. This experiment not only provides additional evidence for the echo effect, but also demonstrates that the communicator’s beliefs about the WOM recipient’s attitude are sufficient for his or her own attitude to be influenced.

Experiments 4 and 5 moderated the echo effect using two different manipulations of feedback about the WOM message. In both experiments, participants were again provided with product information along with a message from their friend asking for their opinion (and no indication of their attitude). After writing the WOM message and completing the filler task, participants in experiment 4 were either informed that the friend had found their message to be useful or told that it was unhelpful. In experiment 5, participants discovered that their friend had either purchased the product or had not purchased it. In both experiments, the manipulation of feedback moderated the echo effect.

Thus, we find evidence for the Echo Effect across five experiments —communicators’ own attitudes end up being influenced by the content of the shared WOM messages—and discover that the mechanism driving the effect lies in the extent to which the communicator attempts to adjust for the WOM recipient’s attitude toward the product. These studies make an important contribution to the existing literature because they extend previous psychological findings to consumer behavior. Moreover, the novel finding that communicators’ beliefs about the recipient’s attitude can also lead to changes in the WOM content shared and the communicator’s subsequent attitude is a significant addition to this literature. Indeed, these findings suggest that WOM communication is more than just a transfer of information from one person to another, but rather an ongoing dynamic social process with the potential for significant bidirectional influence. As such, these findings bring together multiple research streams on social influence, social cognition, as well as WOM.

Figure 1: Mean WOM positivity and attitude as a function of recipient attitude in experiment 1

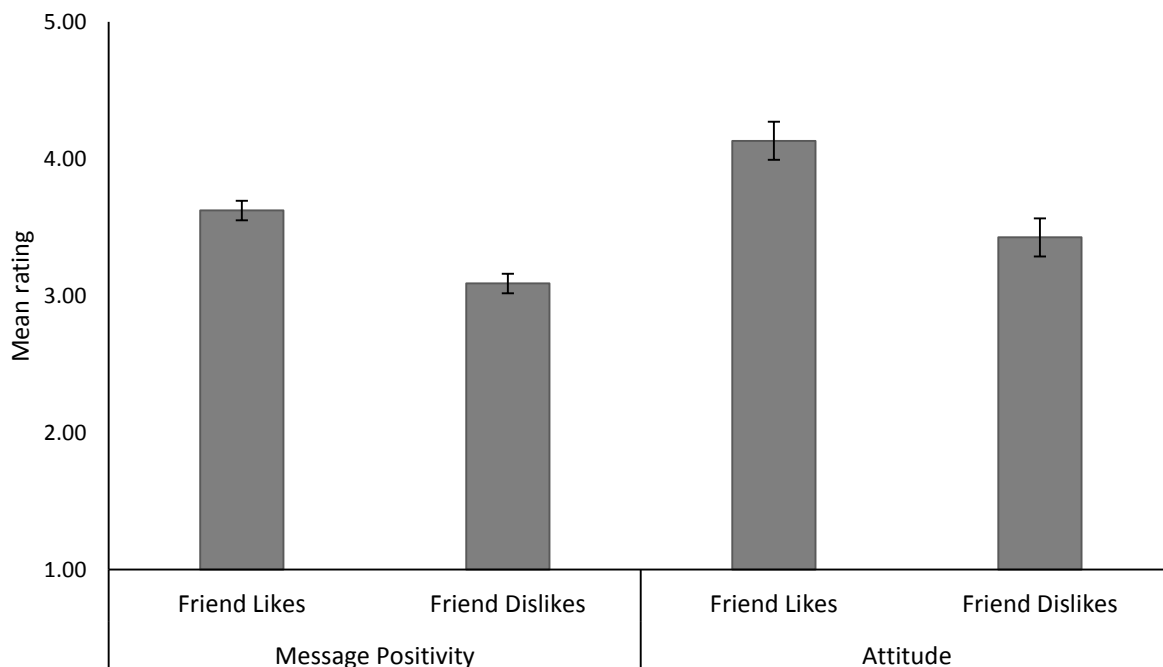
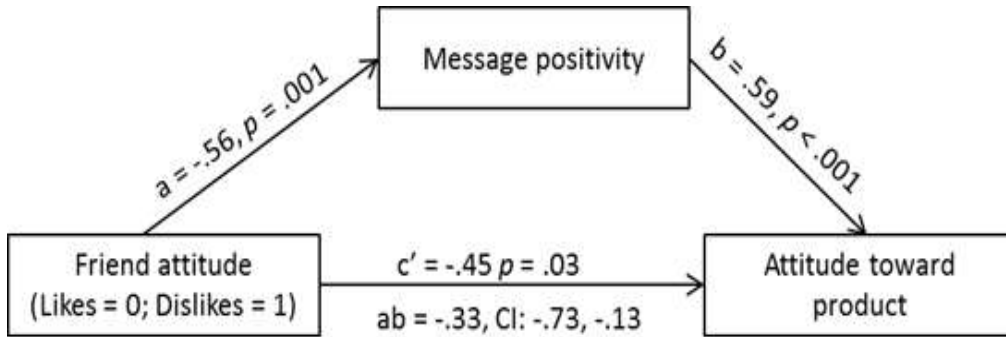


Figure 2: Mediation analysis for experiment 1



Note: The specific product had no significant effects in any of the analyses and is not included in both figures.

For more information contact: ishanibanerji@gmail.com

### ***How Choice Overload Leads us to Succumb to Temptation***

Julie Verstraeten, Ghent University, Belgium\*

Maggie Geuens, Ghent University, Belgium

Iris Vermeir, Ghent University, Belgium

Today's market place is characterized by over-choice; in nearly all choice contexts, consumers are overwhelmed by an abundance of alternatives. Notwithstanding, ample research on how choice overload impacts consumers' judgment- and decision-making, no research yet investigated how it affects option choice. We aim to fill this void by addressing how overload in food assortments influences consumers' choice between indulgent (i.e., vices) and healthier (i.e., virtues) options. In light of the obesity epidemic, this research has substantial relevance for consumer welfare.

Choice overload imposes many adverse effects (Botti & Iyengar 2006), yet more 'virtuous' choices are expected in overload assortments because of increased choice difficulty (Chernev et al. 2014). This stems from Sela and colleagues' (2009) finding that – when choosing from a small versus larger variety of vice and virtue options – individuals select options that are easier to justify (i.e., virtues) when choice difficulty increases with assortment size. As the large assortments in Sela et al.'s studies were limited to 12 options, it remains unclear what happens if assortment size approaches over-choice as encountered in real markets. This paper demonstrates that, despite increased choice difficulty, choosing from overload (vs. smaller) assortments renders consumers more prone to select vices.

As information-processing is less deliberate in instances of overload, which likely impacts decision-making alike (Hills et al. 2013; Townsend & Kahn 2014), and because a loss of ability to differentiate between products (i.e., product agnosia; Jia et al. 2014) also likely arises with increasing assortment size (Fasolo et al. 2009), we expect consumers to succumb to tempting vices in overload assortments. We argue that in overload assortments, the effect of choice difficulty on justification is offset by product agnosia which simultaneously arises and attenuates the need for justification. Indeed, the need to justify diminishes when one perceives fewer differences between products (Xu et al. 2013).

Finally, if Sela et al.'s findings (2009) would generalize to overload assortments, virtuous choices would definitely arise for maximizers, as they rely more on justification and experience more choice difficulty. In contrast, our findings show the opposite which strengthens our claim that product agnosia attenuates justification.

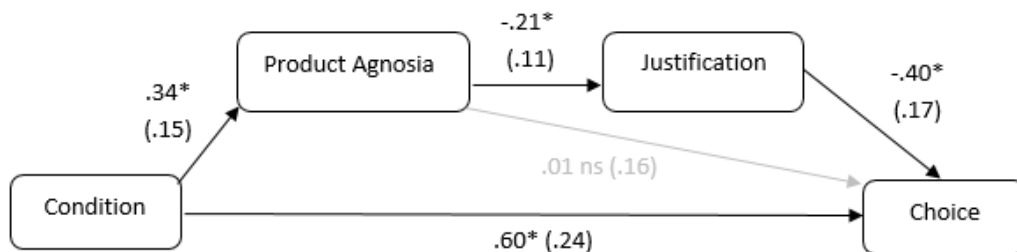
Study 1 replicates Sela and colleagues' findings and demonstrates that choice-patterns reverse for overload assortments. Respondents (N=198; Mage=24) imagined that they were grocery shopping and needed to buy jam. They encountered either 4, 12 or 24 jams. While the former conditions mimic those of Sela and colleagues' studies, the latter should induce overload (Scheibehenne et al. 2010). Assortments randomly displayed a fifty-fifty proportion regular (vice) and low-sugar (virtue) jam flavors. Choice difficulty and justification (e.g., "it is easier to justify") were measured via respectively one and three 7-point Likert items.

Choice difficulty increased with assortment size (M4options=2.78 vs. M12options=3.16;  $F(2,195)=6.32, p<.01$ ). Consistent with prior research this engendered more virtuous choices ( $X^2(2)=5.74, p=.06$ ). Whereas 80.60% of respondents chose a vice in the 4-option condition, this number dropped to 65.10% in the 12-option condition. In line, justification was higher in the latter (M12options=4.06) than in the former condition (M4options=3.61;  $t(128)=-1.84, p=.07$ ). Importantly, choice difficulty further increased (M24options=3.62), but choice-patterns reversed in the overload assortment; justification dropped (M24options=3.71) and again 80.90% of respondents chose a vice.

Study 2 shows why choice difficulty in overload assortment does not impact choice as assumed. That this, because product agnosia – arising with overload – attenuates justification. Respondents (N=91; Mage= 22) made a choice from an assortment of rather unhealthy (vice) and more healthy (virtue) cereals – selected on calorie content – with either 4 or 24 options. Next to choice difficulty and justification, we measured product agnosia (1="Not similar at all," 7="Very similar").

Although choice difficulty increased (M4options=2.54 vs. M24options=3.11;  $t(89)=-2.16, p<.05$ ), respondents increasingly selected vices in the overload assortment ( $X^2(1)=6.733, p=.01$ ). While 46.80% of respondents choosing from the 4-option assortment selected a vice, this number increased to 72.70% when they were offered the 24-option assortment. As predicted, the options were perceived as more similar to one another in the overload than in the smaller assortment (M4options=3.85 vs. M24options=4.52;  $t(89)=-2.18, p<.05$ ). A bootstrap-analysis (Hayes 2013) confirmed the proposed serial indirect effect of agnosia on justification and choice ( $ab=.03, SE=.03, 95\% CI=[.001, .121]$ ; Figure 1).

**Figure 1: Serial indirect effect of product agnosia on justification & choice (Study 2)**



Condition (4-option (0) vs. 24-option assortment (1))

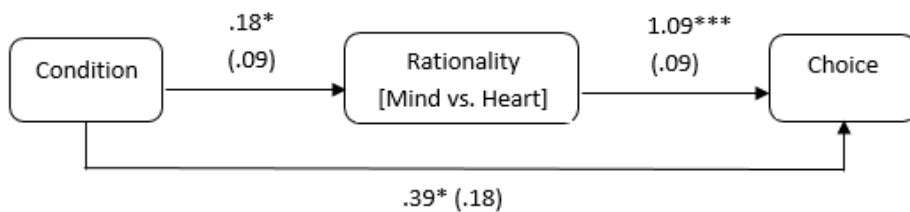
Choice (virtue (0) vs. vice (1))

\*  $p<.05$

Study 3 bolsters the robustness of this finding with more obtrusive vice and virtue options and confirms that decreased rational decision-making renders consumers prone to succumb to temptation in overload assortments. Respondents (N=74; Mage=23) made a choice from an assortment of dairy desserts (vice) and fruit yoghurts (virtue) with either 6 or 28 options. Next, they indicated how rational their choice was on a five item 7-point differential scale (e.g., 1= “My thoughts,” 7=“My feelings”; Shiv & Fedorikhin 1999). Product agnosia was measured on three 7-point Likert items (Jia et al. 2014).

Again, respondents increasingly choose vices in the overload than in the smaller assortment ( $X^2(1)=7.74, p<.01$ ), despite of higher choice difficulty ( $M_{6options}=3.31$  vs.  $M_{28options}=4.03; t(67.31)=2.33, p<.05$ ). While only 33.30% of respondents selected a vice in the smaller assortment, this number increased to 65.70% for the overload assortment. Simultaneously, justification dropped in the overload assortment ( $M_{6options}=3.92$  vs.  $M_{28options}=3.27; t(72)=-2.09, p<.05$ ), caused by increased agnosia in the overload assortment ( $B=-.56$   $SE=.17; t(72)=-3.35, p<.05$ ). Importantly, choices were less rational in the overload ( $M_{28options}=4.35$ ) relative to the smaller assortment ( $M_{6options}=3.80; t(72)=2.09, p<.05$ ). A bootstrap-analysis revealed that this drives consumers’ choices in overload assortments ( $ab=.20, SE=.13, 95\% CI=[.017, .536]$ ; Figure 2).

**Figure 2: Mediation analysis (Study 3)**



Condition (6-option (0) vs. 28-option assortment (1))

Choice (virtue (0) vs. vice (1))

\*  $p<.05$ , \*\*\*  $p<.001$

Finally, Study 4 shows that maximizers are more prone to fall prey to this adverse overload-effect. Respondents (N=94; Mage=23) were offered an assortment of chocolate cookies (vice) and cereal biscuits (virtue) with either 10 or 40 options.

Again, more vices were chosen in the overload than in the smaller assortment ( $X^2(1)=4.50, p<.05$ ), despite of higher choice difficulty ( $M_{10options}=3.06$  vs.  $M_{40options}=3.83; t(86.30)=-2.35, p<.05$ ). Importantly, we found an interaction with respondents’ maximizing tendency (Swartz et al. 2002), revealing a more pronounced effect for maximizers ( $B=2.54, SE=.99; p=.01$ ).

In sum, these findings advance academic thinking on how overload affects option choice and have important implications for consumer-welfare.

For more information contact: Julie.Verstraeten@UGent.be

## **Individual Papers: Others, Self, and the Mysterious**

### ***The Bounded Self: Effects of Product-Ownership Induced Identity Activation on Product (Un)Related Task Performance***

Jaeyeon Chung, Columbia Business School, USA\*

Gita V. Johar, Columbia Business School, USA

Possessions define who we are (Belk, 1988). This fundamental insight has led consumer researchers to examine consequences of product ownership for self-perception and judgments. Research has found that consumers perceive themselves to possess the same traits as

products they feel ownership over (McCracken, 1986) and exhibit product-consistent behaviors (Gino, Norton, & Ariely, 2010). In this research, we adopt an excitatory and inhibitory perspective to examine how feelings of ownership over a product affect consumers' performance on product-related and unrelated tasks.

We propose that feelings of psychological ownership over a product increase beliefs that product-related traits are an important part-of-the-self (Weiss & Johar, 2013). Accordingly, this leads to an activation of the product-related self and a deactivation of product-unrelated selves (Hugenberg & Bodenhausen, 2004). We suggest that such deactivation is exhibited in consumers' performance impairment on product-unrelated (vs. related) tasks (Macrae, Bodenhausen, & Milne, 1995).

**Experiment 1A** was designed to test the basic effect of our hypothesis. Students ( $N = 101$ ) were randomly assigned to one of four conditions (psychological ownership: ownership/baseline  $\times$  quiz: related/unrelated). Half of the participants in the ownership condition saw a Play-Doh logo and described what the icon looks like, as suggested by prior research that visual elaboration increases the feelings of psychological ownership (Feuchtl & Kamleitner, 2009; a separate pretest revealed that this successfully increases feelings of psychological ownership). Participants in the baseline condition summarized a short article. Next, all participants solved a quiz (e.g., fitting a block into a cube that is composed of different colors) that was either framed as measuring people's hand-crafts skills (related) or navigation skills (unrelated). As expected, participants who experienced psychological ownership over Play-Doh performed worse in the navigation-labeled quiz compared to the hand-crafts-labeled quiz ( $p = .006$ ). Performance in the baseline condition did not differ by quiz-labels ( $p = .706$ ).

**Experiment 1B** conceptually replicated the findings from Experiment 1A by using another product, Google Maps. Students ( $N = 80$ ) engaged in the same ownership manipulation task as in Experiment 1A that simply replaced the Play-doh logo with the Google Maps logo. Next, participants either solved a navigation quiz or a visual-art quiz that were composed of identical questions. As expected, within the ownership condition, participants in the visual-art quiz performed worse than those in the navigation quiz ( $p = .002$ ). Performance in the baseline condition did not differ by quiz-labels ( $p = .380$ ).

However, one may argue that because only the participants in the ownership (vs. baseline) condition saw a logo, their performance may have been driven by goal-priming, rather than identity salience triggered by psychological ownership. To rule out this explanation, we ran **Experiment 1C** by adding an incidental prime condition. Students ( $N = 118$ ) visually elaborated Google Maps (ownership), summarized a short article (baseline) or summarized the article with a Google Maps logo advertised next to the article (prime). Next, participants either solved the navigation quiz (relevant) or the visual art quiz (irrelevant). Again, we only observed the performance impairment within the ownership condition; these participants performed worse in the visual-art quiz than in the navigation quiz ( $p = .048$ ). Importantly, the performance in the prime condition did not differ by quiz-type ( $p = .453$ ), thereby ruling out the priming account.

**Experiment 2** used a more direct manipulation of psychological ownership. Further, we conducted a mediation analysis to suggest that performance impairment is driven by unconscious disengagement from the product-unrelated task. First, participants ( $N = 104$ ) described the location of a calculator program on a desktop of their personal computer (ownership) or on a public library computer (no-ownership). Next, all participants solved a quiz (e.g., identifying patterns of boxes filled with arithmetic signs), that was either labeled as an algebra quiz or a visual-sensitivity quiz. Lastly, participants reported their level of effort, involvement and difficulty in the task. Results again revealed that participants in the ownership condition performed worse in the visual-sensitivity quiz than in the algebra-labeled quiz ( $p = .001$ ). Scores on the two quizzes did not differ within the no-ownership condition ( $p = .166$ ). A mediation analysis using the time spent on the quiz revealed that participants in the ownership condition indeed attended less on a product-unrelated (vs. related) quiz ( $\beta = .68$ , 95% CI = .16 to 1.48). However, there was no difference in participants' explicit self-report on their level of effort, difficulty and the involvement across the 4 conditions ( $p$ 's  $> .130$ ). These findings suggest that people unconsciously withdraw their attention away from tasks when tasks mismatch their salient identity (Coleman & Williams, 2013).

If our explanation that these effects are driven by the activation of product-related selves is correct, then the observed performance impairment is likely to be more evident among consumers who have a relatively unclear self-concept. These consumers are more likely to have their self-identity activated based on cues in the environment such as products and possessions (Campbell et al., 1996).

**Experiment 3** tested this boundary condition by employing another ownership manipulation and by using an anagram task. To manipulate differing degree of psychological ownership, participants (N = 193) described earbuds that they own (*ownership*) or a notepad they use to track things in life (*baseline*). Next, participants solved a music comprehension- or a creative-writing quiz that had identical set of anagrams (e.g., octave, score), followed by a self-concept clarity measure. Consistent with our prediction, at 1 SD below the self-concept clarity score, participants in the earbud ownership condition performed worse in a creative-writing quiz than in a music-comprehension quiz ( $p = .027$ ). There was no score difference within the baseline condition ( $p = .28$ ). In contrast, at 1 SD above the self-concept clarity score, we did not find any performance differences.

Results from five experiments reveal a robust link between products we feel ownership over and our behavior. Our behavior is consistent with the traits of our possessions, presumably because we ascribe these very same traits to ourselves. While such enhancement of performance may be beneficial, product ownership also has a downside in that it attenuates performance on traits that are not ascribed to possessions.

For more information contact: [jchung17@gsb.columbia.edu](mailto:jchung17@gsb.columbia.edu)

### ***Knowledge is Power: the Effect of Demystification on Consumption Experience***

Taly Reich, Yale University, USA

Ernest Baskin, Saint Joseph's University, USA\*

Decades of past research point to the upside of experiential purchases, suggesting that it improves consumers' well-being compared to material purchases (for a review, see Gilovich, Kumar and Jampol, 2014). While prior research has focused on the experiential consumption consequences and the psychological mechanism underlying them, little attention has been devoted to its antecedents. In the current research, we focus on an important precursor to consumption, namely, the knowledge that a consumer has about the experiential product. Specifically, we examine the effect of knowing how an experience is structured, such as the chords of a song or the story spine, on the intensity of the experience.

Conventional wisdom offers two related competing intuitions, knowledge is power and ignorance is bliss. Supporting the latter, research on "flow" suggests that learning the structure of an experience could prevent full immersion into the experience. That is, it could disrupt "flow", which is a state of total immersion in which a person becomes involved with a task without focusing on its concrete details (Csikszentmihalyi, 1975). The Gestalt psychology findings also support this notion. Given that the whole is greater than the sum of its parts (Kohler, 1969), an experience broken down into its component elements, such as the chords of a song, may not be experienced holistically. Thus, these two bodies of literature suggest that any distraction or attempt to break down the whole worsens the overall experience.

On the other hand, work on consumption vocabulary has supported the knowledge is power notion, by showing that giving people product feature vocabulary leads to a greater ability to discriminate across alternatives and more stable preferences (West, Brown, Hoch, 1996). In addition, work on rituals have suggested that paying attention to specific actions in a ritual setting can enhance consumption

because of greater personal involvement (Vohs, Wang, Gino, Norton, 2013). Building on this work, we suggest that providing information on how an experience is structured results in active consumption. That is, it converts the consumer from a passive to an active agent. This active consumption is driven by the consumer actively searching for the structure while engaging in the experience, which can in turn intensify the affective consequences of the experience. We examine this hypothesis in four experiments.

*Study 1A.* In Study 1A, we looked at lay intuitions about the impact of knowing a product's structure on the consumption experience. In this study, participants were told that, in a previous study on mturk, participants were randomly assigned to one of two conditions. In the first condition, participants were asked to listen to the song "Don't Forget Me" by the Red Hot Chili Peppers. In the other condition, participants were asked to read the song's musical structure before listening to the song. Participants in our study were given this blurb, which contained information about the role of each stanza and the chords used in the song. Then, they predicted the study's outcome. People predicted that participants would enjoy and like the song more when they were not given any information about the musical structure of the song.

*Study 1B.* In Study 1B, we put lay intuitions to the test by examining the effect of knowledge about the structure on actual experience. Specifically, we looked at how providing information about the structure of "Don't Forget Me" by the Red Hot Chili Peppers would influence the consumption experience of the song. We found that contrary to lay intuitions, participants who read about the structure of the song reported enjoying the song more than participants who did not.

*Study 2.* In Study 2, we wanted to extend our findings to the negative domain as well. Therefore, Study 2 looked at a nerve-wracking music video, "Stan" by Eminem to understand whether structure affects the emotional experience of this music video. This music video was chosen due to its complete story with a twist ending. In this study, participants in the storyline condition were given information as to how a general story is structured. As such, we predicted that the results would be moderated by the extent to which people were musically inclined as musically inclined individuals might exhibit domain general overconfidence (Bornstein and Zickafosse, 1999; West and Stanovich, 1997) and not pay attention to any additional information about something they supposedly already know a lot about. As predicted, we found that musically inclined people are less likely to pay attention to the storyline even after having it demystified for them as they interact with music differently than those who are not musically inclined.

*Study 3.* In study 3, we sought to further establish the causal link between structure and affective amplification. To do so, we directly manipulated the type of knowledge about the experience in order to demonstrate that the amplification is driven by structure and not from general knowledge about the song. We found that compared to participants who were provided with no information and participants who were provided with general information about the song (year of release, which band member played which instrument, etc.) participants who were provided with knowledge about the structure of the song were more likely to enjoy the song, because they were more likely to look for structure while listening to the song, which led them to feel like they were an active listener of the song. Again, this effect was moderated by whether people were musically inclined, such that only non-experts exhibited our effect. In addition, this study also demonstrated downstream consequences in the form of willingness to pay and willingness to listen.

*Discussion.* While conventional wisdom offers opposing intuitions regarding the effect of knowledge on consumption, we find that knowing how an experience is structured can intensify the consumption experience. This increased intensity, in both positive and negative domains, is driven by seeking out the structure of the experience while engaging in it, which results in feeling more of an active participant in the experience. Our work contributes to the scarce literature on the antecedents of experiential consumption.

For more information contact: [taly.reich@yale.edu](mailto:taly.reich@yale.edu)

*A Brand “Like Mom Used to Make”: Exploring the Effect of Activating Interpersonal Relationship Schemas on Consumer-Brand Relationships*

Mansur Khamitov, PhD Candidate, Ivey Business School, Western University, Canada\*

Allison R. Johnson, Ivey Business School, Western University, Canada

Matthew Thomson, Ivey Business School, Western University, Canada

Relationship marketing scholars have suggested that consumers think about their relationships with brands in many of the same ways they think about their relationships with people (Fournier 1998; Aggarwal 2004). For example, researchers have characterized brands in terms of personality traits (Aaker 1997), relationship norms (Aggarwal 2004; Aggarwal and Law 2005) and attachment behaviors (Thomson, MacInnis and Park 2005), all of which have roots in the interpersonal domain. Furthermore, they have found that consumers resonate with these characterizations of brands and respond easily to questions about what brands to which they feel connected (Sen et al. 2015). Because brands can fulfill many of the functions of a relationship partner (Fournier 1998), consumers in these brand relationships experience satisfaction and react to the brand in many of the same ways they react to interpersonal partners: for example, emotional responses (Thomson et al. 2005), reactions to one’s own and the brand’s transgressions (Goode, Khamitov and Thomson 2015; Johnson, Matear, and Thomson 2011), and investment in, or loyalty to, the relationship (Park et al. 2010). An implicit assumption in this literature seems to be that because people experience brand relationships in many of the same ways they experience interpersonal relationships, they are applying relationship schemas to their assessments of brands (Aggarwal 2004; Fournier and Alvarez 2012).

Our goal is to explicitly test the validity of this implicit assumption. Interpersonal relationship schemas are likely to form the basis for the experience of any type of relationship, including brands, in much the same way that early relationships in childhood form the basis for the interpersonal relationship schema in the first place (Collins and Read 1990). However, when an interpersonal schema is active, brands might violate norms and expectations that come with the interpersonal schema and could therefore fall short. That is, the interpersonal relationship schema might not adequately apply to brand relationships because the standards and criteria relevant to interpersonal relational partners, such as the perceptions of reciprocity, are quite different from the common capacities of brands (Bengtsson 2003; Yoon et al. 2006). Hence, when people think about brands through the same lens they apply when thinking about people, brands might violate expectations of reciprocity that come with the interpersonal schema and hence assessments of consumer-brand relationships might suffer.

Study 1 establishes the phenomenon that activating interpersonal relationship schemas changes consumers’ brand evaluations by lowering perceptions of reciprocity (i.e. proximal mediator) and brand relationship strength (i.e. distal mediator). This study uses self-selected brands and primes relationship schema activation both explicitly and implicitly. We find that interpersonal relationship schema activation causes weaker brand evaluations (attitudes, WOM, price premium, and willingness to defend) through lower perceptions of brand reciprocity and brand relationship strength.

Study 2 replicates this effect with a different means of eliciting brands and a different measure of brand relationship strength. Instead of using self-selected brands, which may be prone to idiosyncratic and selection effects, study 2 asked respondents about specific pretested brands (Apple and Abercrombie & Fitch). The results of Study 2 replicate study 1, offering additional support for the hypothesis that respondents who receive an interpersonal relationship schema activation perceive brands to be have less reciprocity, resulting in weaker brand relationships and subsequent lower brand evaluations compared to those simply being asked to rate the brand. The observed effects are supported across two brands.

Study 3 provides further support for the theoretical model by demonstrating that only schema activations of interpersonal relationships cause reductions in brand reciprocity and brand relationship strength, thus replicating the mediational pathway observed in studies 1 and



2. In contrast, schema activations of other types of relationships or targets (e.g. other brands, celebrities) largely did not change brand evaluations. In addition, study 3 reinforces the role interpersonal relationship schema activations play in influencing perceptions of brand relationship strength by revealing an important asymmetry: interpersonal relationship strength is not affected when immediately preceded by brand questions but the reverse is not true. This result, coupled with the fact that we get the same effect with casual and disliked relationship schema activations, challenges a perceptual contrast effect as an explanation.

The results of study 4 demonstrate that the weakening effects of interpersonal relationship schema activations on brand relationship strength are not driven by reduced materialism or enhanced perceived social support but rather by the extent to which the brand relationship fits in to the activated relational schema. This explanation is supported by changes to perceived reciprocity in the anthropomorphization condition. Replicating results of previous studies, consumers who received (vs. did not receive) an interpersonal relationship schema activation reported weaker scores on brand reciprocity and strength. However, among consumers who were cued to anthropomorphize brands and thus integrate brand relationships into relational schemas, the schema activations had little effect. In addition, the robustness of the effect of interpersonal relationship schema activations was supported using multiple measures of brand relationship strength.

To the best of our knowledge, this investigation provides the first direct empirical test of this assumption in the consumer-brand relationship literature: specifically, that consumers are applying interpersonal relationship schemas to their assessments of brand relationships. This work contributes to the consumer-brand relationships literature by helping to draw a finer line between brand and interpersonal relationships (Swaminathan and Dommer 2012), examining how the broader context of the consumer's life influences brand relationships (Fournier 2009), and investigating how placing brand relationships in the context of interpersonal relationship cues can impact brand evaluations (Cavanaugh 2014). Our results reinforce the idea that addressing the question of brands as viable relationship partners (Fournier and Alvarez 2012) is critically important since we show that by placing brand relationships in the context of their 'real lives' (Fournier 2009) changes how consumers evaluate and perceive those brand relationships. Perhaps less than brand relationship scholars presume, consumers themselves seem less open to embracing the idea that relational schemas apply to their interactions with brands, as evidenced by the fact that when an interpersonal relationship schema is cued, consumers rate brands as significantly less reciprocating.

For more information contact: mkhamitov@ivey.ca

### ***Good or Bad? Exploring Differential Effects of Creativity on Pro-social Behavior***

Lidan Xu, University of Illinois at Urbana-Champaign, USA\*

Mehta Ravi, University of Illinois at Urbana-Champaign, USA

Previous research examining the effects of being creative on social behaviors has produced conflicting results. A part of research has shown positive effects of being creative, like prevention of automatic stereotyping (Sassenberg and Moskowitz 2005), and conflict resolution (Gruber 2000). Yet another stream of research suggests just the opposite and demonstrates negative effects of being creative on personal and social behaviors, like threatening of social connection and relationships (Ardnt et al. 1999), and increased dishonest behaviors (Gino and Ariely 2012). The present work aims to resolve this existing inconsistency in the literature by illuminating the cognitive processes through which creative engagement may affect social behaviors in general and pro-social behaviors in particular. Specifically, we propose that the style of creative thinking (i.e., divergent versus convergent thinking; Guilford 1957; Cropley 2006; Runco 2003) consumers adopt during creative engagement induces competing mindsets, which in turn differentially impact subsequent

pro-social behaviors. In particular, thinking divergently (convergently) we propose, induces a broadened (narrowed) mindset that in turn enhances (reduces) pro-social behaviors (Fredrickson 2001).

Divergent thinking requires consumers to explore many alternative possible solutions and appreciate the variety and diversity of ideas (Csikszentmihalyi 1997; Guilford 1959). Thus, the information processing under divergent thinking is broad and inclusive in nature (Lin and Lien 2013), which we argue will induce a broadened mindset (Fredrickson 2001). On the other hand, convergent thinking requires elimination of irrelevant or non-workable solutions; that is, it employs a constrained cognitive process that draws on executive functions that remain “on target” until the solution is found (Chermahini and Hommel 2010). Such “focused” mode of information processing, we propose, induces a narrowed mindset (Fredrickson 2001). Further, we propose that when a broadened (narrowed) mindset is activated, individuals engage in more expansive thinking and inclusive categorization, which broadens people’s sense of self to include others and produce greater feelings of “oneness” (Waugh and Fredrickson 2006) and positively affects their pro-social behavior (Cialdini et al., 1997; Mobbs et al. 2009; Penner et al. 2005).

The present research thus provides new insights into divergent and convergent thinking and how these two types of creative thinking may induce competing mindsets and thus differentially impact subsequent social behaviors. Next, we detail a set of 5 studies that were conducted to provide support for our proposition.

Study 1A and B tested our focal hypothesis, that is, whether engaging in different creative thinking styles differentially affects one’s pro-social behavior. In study 1A participants completed either a divergent creative thinking task (draw an alien; Ward 1994), or a comparable control task (draw a human). In study 1B participants completed either a convergent creative thinking task (Remote Associates Test; Mednick 1962), or a comparable control task (proofreading task). After completing the subject tasks, participants in both studies were presented with an advertisement seeking donations and asked to indicate their likelihood of donating money at that moment in time. Supporting our hypothesis, one-way ANOVA revealed a significant main effect of creative thinking style on pro-social behavior in both the studies. In study 1A participants in the divergent creative thinking condition ( $M = 4.55$ ) indicated higher likelihood to donate as compared to those in the control condition ( $M = 3.46$ ;  $F(1,44) = 4.28, p < .05$ ). In study 1B, however, participants in control condition indicated higher likelihood to donate ( $M = 4.75$ ) as compared to those in the convergent creative thinking condition ( $M = 3.81$ ;  $F(1,61) = 5.99, p < .05$ ).

Study 2 directly examined the effect of the two different creative thinking styles on pro-social behavior. The participants were presented with the shoe-shine problem (Burroughs and Mick 2004) and asked to either come up with as many creative solutions as possible (divergent creative thinking) or the most creative solution (convergent creative thinking). The participants then indicated the amount of money they would be willing to donate in response to a donation appeal. Those who engaged in divergent creative thinking ( $M = 11.52$ ) reported higher donation amounts than those who engaged in convergent creative thinking ( $M = 5.38$ ;  $F(1,47) = 4.03, p = .05$ ).

Study 3, then tested the proposed underlying mechanism for the observed effect. The participants again engaged in a divergent versus convergent thinking task and were asked to indicate the amount of money they would be willing to donate to a charitable organization (Winterich and Zhang 2014). The participants also completed a social categorization task, which has previously been used to assess activation of broadened and narrowed mindset (Isen, Niedenthal, and Cantor 1992). It was found that those who engaged in divergent creative thinking ( $M = 8.12$ ) indicated willingness to donate higher amount of money as compared to those who engaged in convergent creative thinking ( $M = 5.13$ ;  $F(1, 122) = 4.10, p < .05$ ). Further, and importantly, a mediation analysis revealed that broadened vs. narrowed mindset mediated this relationship ( $\beta = 1.11, SE = .69, \text{bias-corrected } 95\% \text{ CI} = [.13, 2.98]$ ).

Finally, study 4 manipulated both creative thinking style (divergent versus convergent thinking) and mindset (broadened versus narrowed mindset) and examined their joint effect on the donation amount. Shoeshine problem (Burroughs and Mick 2004) as used in

Experiment 2 was used to induce divergent versus convergent creative thinking styles, while a “personality assessment” task from Ulkumen, Chakravati, and Morwitz (2010) was used to manipulate broadened versus narrowed mindset. A 2-way ANOVA returned a marginally significant two-way interaction ( $F(1, 149) = 3.66, p = .06$ ), such that when the participants were induced with a broadened mindset, those who thought divergently indicated higher donation amounts ( $M = 9.27$ ) than those who were asked to think convergently ( $M = 5.21; t(149) = 2.03, p < .05$ ). However, inducing a narrowed mindset reduced inclination to engage in pro-social behavior irrespective of the induced creative thinking style ( $M_{\text{divergent}} = 4.10, M_{\text{convergent}} = 5.56; t < 1$ ).

For more information contact: lidanxu2@illinois.edu

**AWARDS AND BUSINESS LUNCHEON**

**12:30 - 2:00**

**Garden Courtyard/Banyan Bzwy**

**Session 7**

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

***Symposium: Conversation Pieces, Shared Experiences, and Gifts: The Impact of Different Types of Social Consumption on Social Connection***

**Chair:** Kate Min, Cornell University, USA

Peggy Liu, Duke University, USA

***Products as Ice Breakers: The Value of Conversation Pieces***

Hillary Wiener, Duke University, USA\*

James Bettman, Duke University, USA

Mary Frances Luce, Duke University, USA

Positive social connections are fundamental to human health and happiness, second only in importance to people’s basic physiological needs (Baumeister & Leary, 1995; Thoits, 1995). However, it is not always easy to find desirable relationship partners or initiate interactions with them. In two studies we show initial evidence that consumers can use publically displayed products as tools to help them to initiate conversations with others, facilitate self-disclosure, and help these conversations go well.

Previous research has examined the use of products as signals of social status (Wilcox, Kim, & Sen, 2009), group membership (Escalas & Bettman, 2003), and individuality (Berger & Heath, 2008), but these studies have not examined how products might influence the conversations people actually have with each other. In two studies we examine how the products a person chooses to display may influence how successful the “first meeting” conversation between two strangers is. Specifically, we examine how products can facilitate self-disclosure. Self-disclosure increases liking between people (Collins & Miller, 1994) so if products can increase self-disclosures in initial conversations, they should improve interactions and potentially facilitate relationship development.

We first examined how t-shirts might function as “ice breakers” by giving people a good topic with which to start a conversation. In Study 1 ( $N = 300$ ) participants imagined that they were at a casual party where they did not know many people and that they wanted to start a conversation with a woman who was wearing either a plain shirt, a shirt with an ambiguous design on it, or a shirt with that design and the words “Daybreaker Dance Party” on it. Then they wrote an opening line to start a conversation with her.

Three trained coders evaluated these opening lines for how likely they would be to lead to a good conversation. The coding revealed that participants who saw the person in a plain shirt were less likely to start the interaction by asking the person a question (questions are known to be effective conversation openers; Laver, 1981) and their conversation openings were considered to be less likely to lead to a good conversation, less likely to lead to self-disclosure, and less likely to lead to a story (all  $ps < .0001$ ) than were those of participants who saw the person in one of the shirts with a design and/or words on it. Furthermore, there was remarkable consistency in how participants opened the conversations. Participants who saw the person in the shirt with the design and/or words opened the conversation by asking about the shirt (47% of openers) or with some variation of “Hey, how’s it going? Are you enjoying the party?” (38% of openers). Therefore, fully 85% of openers were of one of these types.

In Study 2 (modeled on study 4 in McGraw, Warren, & Kan, 2014), we take advantage of the ubiquity of these two types of openers to examine how starting a conversation by asking about a product influences the full conversation, not just the opening line. In part 1 of Study 2, participants wrote short dialogues in response to the two common ways of starting conversations identified in Study 1. First, participants ( $n = 30$ ) were asked to list a hobby and a place that they had travelled to recently. Then they read and extended two scenarios. In both scenarios, participants were asked to imagine that they were at a party and were wearing a shirt that reflected either the hobby or travel destination they had listed. In one scenario, they were told that a stranger initiated a conversation with them by asking them about their shirt. In the other scenario, they were told that they were wearing the other shirt, but the stranger started the conversation by asking if they were enjoying the party. After reading each scenario, participants wrote out how they would respond to this inquiry, and then extended the conversation between themselves and their hypothetical interlocutor for nine more lines. The order in which participants responded to the scenarios and which shirt the participant was wearing in which scenario was counterbalanced across the study.

In part 2, we selected which of the 60 conversations generated in part 1 would be used in part 3. We wanted to identify conversations that were similar to each other in all respects except for the degree to which they were focused on the topic on the t-shirt. To do this, a separate set of participants ( $n = 302$ ) each read eight of the dialogues generated in part 1 and rated them for realism, unusualness of topic, positivity of tone, dominance of each conversant, and the importance of the t-shirt to the conversation. We identified two pairs of matched dialogues for use in the subsequent study which were similar along all dimensions except for the importance of the t-shirt to the conversation.

In part 3, a third set of participants ( $n = 202$ ) evaluated the selected dialogues. Participants each assessed a pair of dialogues for the amount of self-disclosure and *when* it occurred in the conversation. Conversations that were started by asking about the shirt lead to more disclosure of emotions, preferences, interests, and opinions than did those that were started by asking about the party (all  $ps < .0001$ ). Starting a conversation by asking about the shirt seemed to fast-track disclosure, leading the first topic to be discussed in substantially more depth when the conversation was started by asking about the t-shirt than by asking about the party ( $p < .0001$ ). They were also more intense, more memorable, and the conversants appeared to be closer to each other (all  $ps < .01$ ).

In two studies we find reliable evidence that people who approach a stranger to talk with them rely on publicly displayed products as a source of material for initial conversations and that asking about a product is an effective way to facilitate and fast track self-disclosure. This shows a new use for products—as tools to help people to connect with strangers and potentially establish new relationships.

For more information contact: [hillary.wiener@duke.edu](mailto:hillary.wiener@duke.edu)

***When You Shop for Black Toilet Paper with a New Friend: Extraordinary Experiences Foster Intimacy via Perceived Interpersonal Knowledge***

Kate Min, Cornell University, USA\*

Soo Kim, Cornell University, USA

Despite that a significant portion of our experiences are shared with others, prior research has been limited to showing that sharing experiences with others can bring people closer compared to experiencing events alone (Caprariello & Reis, 2013). We question the premise that any kind of experience would provide relational benefits in any type of relationship.

Experiences can vary in the degree to which they are extraordinary or ordinary (Bhattacharjee & Mogilner, 2014; Sussman & Alter, 2012). Extraordinary experiences “go beyond the realm of everyday life” whereas ordinary experiences are “within the realm of everyday life” (Bhattacharjee & Mogilner, 2014). Extraordinary experiences contribute to an individual’s definition of the self by providing unique materials to build one’s autobiography (Bhattacharjee & Mogilner, 2014) or “experiential curriculum vitae” (Keinan & Kivetz, 2011). We propose that this “defining” influence extends to how individuals feel about the characteristics of someone with whom they are sharing an experience.

We hypothesize that when an individual engages in an extraordinary (vs. ordinary) experience with someone, the individual would feel that the other person has just inadvertently revealed information about his/her personal characteristics. We further hypothesize that this (mis)perception, in turn, would lead one to feel more intimate with the other person. Further, we hypothesize that such an effect would be most pronounced when one is still in the process of getting to know the other person with whom s/he is sharing an experience.

We first establish whether shared extraordinary (vs. ordinary) experiences enhance individuals’ perception of having acquired revealing personal information about the other person. Participants (N = 299) were randomly assigned to an extraordinary versus ordinary shopping experience condition. All participants were first asked to think about someone they had recently met for the first time. Then, participants in the extraordinary (ordinary) experience condition were asked to imagine that they met this person again and went shopping for some *black toilet paper* (*white toilet paper*). Next, we measured participants’ perception of how much they feel that they have acquired revealing personal information about the new acquaintance in this hypothetical experience. As predicted, participants who imagined and described sharing an extraordinary (vs. ordinary) experience felt that they acquired more revealing personal information about the new acquaintance by sharing the experience,  $p = .002$ .

We then examine the consequence of such influence of extraordinary experiences and test whether extraordinary (vs. ordinary) experiences enhance individuals’ feelings of intimacy with the other person whom they are sharing the experience (Study 2; N = 115). The procedure of Study 2 resembled that of Study 1, with the exception of the item being shopped for. In the extraordinary (ordinary) shopping experience condition, participants were asked to imagine and describe a scenario where they met this person again and went shopping for some *festive light bulbs for a holiday event* (*light bulbs for one’s residence*). Next, participants completed perceived intimacy measures regarding the person they are sharing an experience with. As predicted, we found that participants who imagined sharing an extraordinary (vs. ordinary) shopping experience felt more intimate to their new acquaintance,  $p = .040$ .

Next, in Study 3, we explore a boundary condition to the intimacy-fostering effect of extraordinary experiences and show that it is most pronounced in new (vs. old) relationships where there is still room for individuals to learn more about the other person. First, participants (N = 177) were asked to think about and write the initials of someone they have *met for the first time recently* (new relationship condition) versus someone they have *known for a very long period of time* (old relationship condition). Then, in the

extraordinary (vs. ordinary) condition, participants were asked to imagine that they met this person again and went shopping for some *festive light bulbs for a holiday event* (vs. *light bulbs for one's residence*).

A linear regression on perceived intimacy revealed a significant shopping experience x relationship type interaction,  $p = .039$ . In the new relationship condition, participants who imagined sharing an extraordinary (vs. ordinary) shopping experience indicated feeling more intimate to the person,  $p = .048$ . As hypothesized, such an effect was not observed in the old relationship condition.

Finally, in Study 4, we show that enhanced perception of having acquired revealing personal information about the other drives the hypothesized intimacy-fostering effect of shared extraordinary experiences. Participants ( $N = 301$ ) were randomly assigned to recall an extraordinary versus ordinary experience that they shared with a friend whom they do not know very well. Then, participants indicated how much they learned about this unfamiliar friend. Next, they reported their perceived intimacy with the unfamiliar friend.

As predicted, participants who recalled sharing an extraordinary experience with a friend they do not yet know very well felt more intimate to the friend than those who recalled sharing an ordinary experience,  $p = .008$ . Further, we predicted that feelings of having acquired revealing personal information about the other person would mediate the effect of experience on our intimacy measure. We conducted a mediation analysis using the process model 4 that allowed us to test whether the potential mediator underlies the experience effect (Hayes 2013). This model estimated the effect of recalled experience on intimacy indirectly through other-knowledge. First, experience predicted other-knowledge -- recalling an extraordinary (vs. ordinary) experience increased feelings of having knowledge about the other person,  $p < .001$ . Next, the pathway from the mediator (other-knowledge) to the dependent variable (intimacy) was significant,  $p < .001$ . Bootstrapped 99% confidence intervals also confirmed that other-knowledge mediates the effect of experience on intimacy (excludes zero; .06 to .34). Thus, we concluded that acquiring revealing personal information about an unfamiliar friend mediated the effect of recalled experience on feelings of intimacy toward the friend.

In four studies, we found that sharing extraordinary experiences fostered intimacy for new (vs. old) relationship partners. Interestingly, this intimacy-fostering effect was driven by individuals' feelings of having acquired more personal information about the other person. In sum, these findings contribute to the paucity of research on the impact of experiences on social relationships.

For more information contact: [kate.min@cornell.edu](mailto:kate.min@cornell.edu)

#### ***Gift-Giving and Relational Scope: Feasible versus Desirable Gifts Reduce Psychological Distance to the Giver***

SoYon Rim, William Paterson University

Kate Min, Cornell University, USA

Peggy Liu, Duke University, USA\*

Tanya Chartrand, Duke University, USA

Yaacov Trope, New York University, USA

Gift-giving is a prominent form of social exchange. Yet surprisingly little research has examined the relational impact of receiving different types of gifts. The present research compares the effects of two common gift types (high desirability - low feasibility gifts and low desirability – high feasibility gifts) on relational scope, or “the extent to which one's social relationships extend to people who are distant from oneself” (Ledgerwood, Trope, & Liberman, 2015). That is, we examine the impact of these two common gift types on recipients' perceptions of their psychological distance to the giver.

Desirability and feasibility denote the features of a gift that represent the attractiveness or quality of the gift and to the gift's convenience of use, respectively (Baskin, Wakslak, Trope, & Novemsky, 2013; Liberman & Trope, 1998). Desirability is a high-level feature (i.e., primary to the gift's value). Feasibility is a low-level feature (i.e., secondary to the gift's value). We tested the general

prediction that receiving a gift that is high in feasibility (vs. desirability) leads to perceptions of reduced psychological distance to the giver, thereby representing a contraction of the recipient's relational scope. Our prediction draws on the notion that gifts high on the low-level aspect (low-level gift) are more likely to be context-dependent and to require specific knowledge about the recipient; in contrast, gifts high on the high-level aspect (high-level gift) are more likely to be generalized and do not require specific knowledge about the recipient.

In Studies 1a-2b, we tested whether receiving a gift high on feasibility (vs. desirability) reduces psychological distance to the gift-giver (both in terms of social distance [similarity (Liviatan, Trope, & Liberman, 2008), familiarity (Stephan, Liberman, & Trope, 2011)] and spatial distance). In Study 1a, we measured social distance through similarity. Participants ( $N = 136$ ) were asked to imagine receiving two gift certificates from two different people. The high desirability gift certificate was to an upscale restaurant, with a 30/30 Zagat rating, located a 1-hour drive away; the high feasibility gift certificate was to an ordinary restaurant, with a 20/30 Zagat rating, located a 5-minute drive away (Baskin et al., 2014). As expected, participants felt more similar to the gift-giver who they imagined gave them a high feasibility (vs. high desirability) gift. In Study 1b, we instead measured social distance through familiarity and found the same results ( $N = 142$ ). In Studies 1c ( $N = 142$ ) and 1d ( $N = 163$ ), we replicated Studies 1a and 1b using different stimuli (pens), in which the high desirability pen was "state of the art and fancy but not very portable due to its weightiness" and the high feasibility pen was "practical and easily portable but mediocre in aesthetics" (Baskin et al., 2014).

In Study 2a, we used a two-group between-subjects design (feasible vs. desirable gift) and measured spatial distance (another dimension of psychological distance). Participants ( $N = 269$ ) imagined receiving either a highly feasible versus desirable restaurant gift certificate and then indicated how far away they felt the gift-giver was from them. As hypothesized, participants who imagined receiving a high feasibility (vs. desirability) gift thought that the gift-giver was closer,  $p < .001$ . In Study 2b, we replicated this effect in a field setting, in which participants ( $N = 68$ ) actually received either a highly feasible or highly desirable pen from someone they knew (typically a friend).

Finally, in Studies 3a and 3b, we tested our proposed mechanism for the relationship between gift characteristics and psychological distance. Specifically, we tested our hypothesis that the relationship between gift characteristics and psychological distance occurs because recipients believe that the giver has focused more on a high-level, central aspect of the gift (i.e., desirability) versus on a low-level, secondary aspect that generally requires more specific and contextualized knowledge; this inference about the giver's focus on a high-level versus low-level aspect then translates into greater versus less psychological distance. Following Spencer, Zanna, and Fong's (2005), we used an experimental-causal-chain design to establish this proposed mechanism because our proposed mechanism can be measured and manipulated.

In Study 3a, we tested our hypothesis that gift type (IV) affects recipients' beliefs about what the gift-giver was focused on when choosing the gift (mediator). Participants ( $N = 301$ ) imagined receiving either a highly desirable versus feasible restaurant gift certificate. Then they indicated to what extent the gift-giver was focused on the value and quality of the gift (high-level feature) and to what extent the gift-giver was focused on the logistics of using the gift (low-level feature). We found a significant 2 (gift type: desirable, feasible) x 2 (ratings of gift-giver's focus: high-level feature, low-level feature) interaction. In the feasible gift condition, recipients thought the gift-giver was focused more on a low-level feature than on a high-level feature,  $p < .001$ , and vice-versa in the desirable gift condition,  $p < .001$ .

In Study 3b, we then tested our hypothesis that recipients' beliefs about what the gift-giver focused on in choosing the gift (mediator) affects perceived spatial distance to the gift-giver (DV). Participants ( $N = 303$ ) were asked to imagine receiving a gift high on both desirability and feasibility; specifically, a gift certificate to an upscale restaurant (30/30 Zagat) approximately a 5-minute drive away. In the high-level focus condition, participants were told that in choosing this gift, the gift-giver was mostly focused on the gift's value

and quality. In the low-level focus condition, the gift-giver was mostly focused on the logistics of using the gift. Thus, the gift description was held constant across conditions, and we manipulated which attribute the gift-giver ostensibly focused on. Then participants estimated how far away this gift-giver is from them. Participants thought that the gift-giver was farther away if the gift-giver focused on a high-level (vs. low-level) feature,  $p = .054$ .

Overall, eight studies demonstrate that feasible (vs. desirable) gifts led recipients to contract their relational scope. Furthermore, this effect occurred because recipients believe that givers focused more on the low-level (vs. high-level) feature of the gift when choosing a feasible gift, which requires personalized knowledge about recipient circumstances.

For more information contact: [peggy.liu@duke.edu](mailto:peggy.liu@duke.edu)

### ***When Doing Good is Bad in Gift-Giving: Mis-Predicting Appreciation of Socially Responsible Gifts***

Lisa Cavanaugh, University of Southern California, USA\*

Francesca Gino, Harvard Business School, USA

Gavan Fitzsimons, Duke University, USA

As a socially important phenomenon, gift-giving helps individuals signal their commitment and caring in social relationships (Belk, 1976; Caplow, 1982). Individuals face numerous occasions in which they need to choose gifts for others with whom they have a personal (family, friends, neighbors) or professional (assistants, bosses, interns, co-workers) relationship. Often consumers find themselves in situations where they need to choose a gift for someone whose explicit preferences are unknown. An increasing number of gift givers are turning to “gifts that give twice”—that is, gifts supporting a worthy cause (Maciejewsky, 2008). Such gift choices are often motivated by people’s desire to “do good” (Andreoni, 1990) and identification with moral identity (Aquino & Reed, 2002). We examine whether such gifts have the outcomes expected by givers.

Most research on gift giving has focused on gifts that benefit the recipient directly, such as products, monetary gifts, or gift certificates. Past research has examined how a variety of gift characteristics impact appreciation, including whether a gift is requested (e.g., gift registry; Bradford & Sherry, 2013; Gino & Flynn, 2011; Ward & Broniarczyk, 2011), expensive (Flynn & Adams, 2009), or material vs. experiential (Van Boven & Gilovich, 2003). Socially responsible gifts, such as a charitable donation made in the recipient’s name, do not benefit the recipient directly; rather, they are intended to produce an indirect psychological benefit to the recipient, namely a sense of satisfaction and happiness from helping a third party in need (e.g., a charity) and perhaps connoting recognition of an altruistic or moral identity. Moreover, socially responsible gifts are often intangible and their cost transparent (e.g., \$50 donation in your name). As such, socially responsible gifts provide an interesting context for understanding when symbolic meaning is most likely to impact givers’ predicted and recipients’ actual appreciation.

Building on prior work documenting mispredictions in gift-giving (e.g., Adams, Flynn, & Norton, 2012; Flynn & Adams, 2009; Gino & Flynn, 2011; Zhang & Epley, 2012), we argue that, under certain conditions, socially responsible gifts are substantially less appreciated by recipients than givers anticipate. We propose that reactions to socially responsible gifts and interpretation of their meaning largely depend on relational closeness between the gift giver and the receiver. Specifically, we find that givers consistently mispredict appreciation of socially responsible gifts, overestimating appreciation for more distant others.

Our research is the first to explore 1) whether socially responsible gifts are appreciated, 2) what socially responsible gifts communicate in the minds of those giving vs. receiving them, and 3) when mispredictions of appreciation are most likely to occur. We identify



relational closeness as an important moderator to documented mispredictions in appreciation of symbolic gifts. Three studies support our hypotheses, comparing non-tangible, socially responsible gifts (e.g., a charitable donation in the recipient's name) to both tangible and non-tangible gifts that produce direct benefits to the recipient (e.g., a gift basket or a gift certificate).

In Study 1, we investigate the role of relationship closeness as an important moderator. Participants ( $N = 151$ ) were randomly assigned to a 2 (role: giver vs. receiver) x 2 (relational closeness: close vs. not close) design. Results revealed the predicted role x relationship closeness interaction on all measures: appreciation, thoughtfulness, favorability, offensiveness and the gift symbolizing commitment to the relationship (all  $p$ s  $< .002$ ). On all measures, givers predicted that the recipient would appreciate the socially responsible gift much more in the case of a distant rather than a close friend ( $p < .001$ ). However, in close relationships, givers underestimated how much recipients would appreciate socially responsible gifts ( $p < .003$ ). Moreover, givers believed receivers would appreciate the donation more when the recipient was a distant rather than a close friend.

We test the generalizability and external validity of our findings in Study 2. We examined the phenomenon using real gifts and real relationships (close and distant). University students ( $N = 245$ ) were randomly assigned to a 2 (role: gift giver vs. gift recipient) x 2 (relationship closeness: close vs. not close) x 2 (gift type: socially responsible gift vs. traditional gift) design, described as a gifting study in exchange for credit or \$5 gift-card. In advance of their lab session, participants identified multiple friends, and we randomly selected and contacted one of the listed friends. Friends were contacted via email and asked to make a \$25 gift choice from six options for the person named. After making their choice, gift-givers completed all the same dependent measures. When student participants arrived at the lab for their in-person session, the gift chosen by their friend was presented to them. After collapsing across gift type (traditional vs. socially responsible gift), results showed that 39.1% of givers chose the socially responsible gifts and 60.9% chose traditional gifts for friends. We found a significant relationship closeness by gift type interaction ( $p < .03$ ) and a significant three-way role by gift type by relationship closeness interaction ( $p < .02$ ). The simple role by relationship closeness interaction was significant for socially responsible gifts ( $p < .02$ ), but not traditional gifts ( $p < .44$ ). Probing with the Johnson-Neyman technique showed that givers significantly overestimated recipients' appreciation for socially responsible gifts at low levels of closeness (below 3.1030), i.e. distant relationships.

In Study 3, we provide more direct evidence for the psychological mechanism. We again used a three-stage real gift design as in Study 2 but focused only on recipients' reactions to socially responsible gifts ( $N = 256$ ). Participants completed measures for symbolic meaning of the gift and appreciation. In distant relationships, givers overestimated the extent to which recipients found socially responsible gifts to have symbolic meaning and overestimated appreciation (all  $p$ s  $< .001$ ). Bootstrap analysis showed that perceived symbolic meaning of the gift mediated givers' overestimation of appreciation. Together these three studies show that givers mispredict appreciation for socially responsible gifts, and that their mispredictions depend on the nature of their relationship to the recipient.

For more information contact: [lisacava@marshall.usc.edu](mailto:lisacava@marshall.usc.edu)

## ***Symposium: The Greater Good: Behavioral Research with Social Value***

**Chair:** Nicole Robitaille, Queens University, Canada

Nina Mazar, University of Toronto, Canada

### ***Setting the Record Straight on Sugary Drink Portion Cap Policies***

Grant E. Donnelly, Harvard Business School, USA

Leslie K. John, Harvard Business School, USA\*

Christina Roberto, Harvard School of Public Health, USA

We test the effect of portion size caps on people's propensity to buy sugary drinks. This intervention stems from the behavioral economic notion of constructed preferences – that people have difficulty knowing what they want, and therefore turn to contextual cues to try to resolve this uncertainty. In food consumption, this translates into “mindless eating” – instead of relying on their bodies to tell them when they're full, people rely on contextual cues, such as an empty plate, to tell them that they are full. Consistent with this perspective, Brian Wansink and colleagues have conducted a series of ingenious experiments in which, for example, people eat fewer chicken wings when the remnants of the eaten wings (i.e. bones) are left on the table, as opposed to when they are continually cleared away. The bones serve as a cue reminding people of how much they've eaten, in turn curbing consumption. Therefore, we thought that reducing the portion size of soda may serve to reduce consumption, while at the same time preserving individual choice – people are free to order as many sodas as desired.

Although there is reason to suspect a soda cap policy to reduce consumption, this intervention has been met with considerable public and political resistance. In 2012, the New York City Board of Health prohibited restaurants from selling sugary drinks (i.e. soda and juice) over 16 ounces. However the policy was never implemented because it was overturned by city council. Contributing to the opposition has been an influential piece of research concluding that limiting sugary drink sizes will have adverse unintended consequences (Wilson, Fantino, & Fantino, *PloS One*, 2013). Specifically, these researchers argued that in response to such a policy, firms will start to offer bundles. For example, banned from offering a large-sized 24 ounce soda, the authors contend, firms would offer the large size as 2x12 ounce sodas. Moreover, the authors argue that framing a 24 ounce soda as 2x12 ounce sodas will increase consumption.

However, the study design did not resemble the way in which this policy would actually be implemented, and thus, the authors' conclusions are unwarranted. Specifically, the study was hypothetical, underpowered, and conducted online. Thus participants did not actually order drinks and hence, consumption was not measured. It would seem that giving participants the opportunity to actually buy drinks would be a minimal design requirement to test the effect of soda cap policies. Given that sugary consumption is a major contributor to the societal problem of obesity, assessing the true effect of this possible firm response is of critical importance.

We therefore conducted a large-scale, well-powered experiment in which we assessed the effect of soda caps on people's propensity to order and consume soda. We also tested whether the effect of soda caps might depend on the type of restaurant: whether it is self-serve or full service. One could imagine that bundling might be particularly effective at curbing consumption in a self-serve context, for it capitalizes on the embarrassment and inconvenience people face in having to carry two sodas to their table. The study was therefore a 2x2 between-subjects design in which we manipulated bundling (single unit vs. bundled) and service style (self-serve vs. served).

Participants (N=297) were endowed with forty cents, which they could use to buy sugary drinks. All participants had the choice of purchasing either nothing (in which case they could keep all 40 cents), a medium (16 ounce) drink for 20 cents, or a large (24 ounce) drink for 30 cents. To encourage drink buying, we kept prices low and offered a choice between two different (sugary) drinks: iced tea or lemonade. In the single unit condition, the choice was simply between one 16 ounce cup or one 24 ounce cup. In the bundled condition, the large option was presented as two 12 ounce cups. Thus in the bundled condition, the medium size was presented as one 16 ounce cup, whereas the large size was presented as 2x12 ounce cups. In the served condition, the soda was delivered directly to the participant's table; this condition mimicked a sit-down restaurant in which sodas are delivered to patrons by waiters. In the self-serve condition, participants had to walk over to a booth to pick up their order. Critically, at the time of making their purchase decision, participants were aware that they would either be served the soda (served condition) or would have to personally pick up the soda (self-serve condition).

Results indicated that regardless of service style, bundling caused people to order fewer ounces of soda: In the single unit condition, approximately 45% of participants ordered the large size, compared to only 20% of participants in the bundled condition ( $p=.03$ ). There was no effect of service style, nor did service style interact with bundling. In ongoing research, we are testing other possible firm responses that could substantively impact the effectiveness of soda size cap policies; for example, offering free refills.

For more information contact: ljohn@hbs.edu

### ***Nudging to Increase Organ and Tissue Donor Registrations***

Nicole Robitaille, Queens University, Canada\*

Nina Mazar, University of Toronto, Canada

Claire Tsai, University of Toronto, Canada

On average, 18 people in the United States die every day waiting for an organ transplant because of a growing shortage of donated organs (organdonor.gov 2014). Over 100,000 individuals are currently on the transplant waiting list and the gap between those needing transplants and those receiving them continues to widen. While the vast majority of individuals acknowledge the urgent need for more organ and tissue donors and support organ and tissue donation, it is puzzling that many of them do not take action and register.

Behavioral scientists have started to investigate the shortage of registered organ donors and explore ways to encourage individuals to register their consent. For example, Johnson and Goldstein (2003) demonstrated that countries with a presumed-consent default – individuals are automatically registered as donors unless they explicitly opt-out – have, on average, 60% more of the population registered as donors compared to countries with an explicit-consent default – individuals are not registered as donors unless they explicitly register their consent. The takeaway of this research is that one way to address the low number of registered donors may be to change the organ donation policy default from an explicit-consent system to a presumed-consent system. In spite of the positive evidence for the presumed-consent default, ethical concerns have been raised with this approach. Further, recent empirical evidence showed that changing the default may be ineffective at increasing registrations (Ammann 2010). Therefore it is important to identify potential psychological barriers to donor registration in explicit-consent systems and develop corresponding countering interventions to increase the number of registrations in these systems.

The aim of this research is to apply theories from behavioral science to develop interventions to nudge individuals into action and increase organ donor registration rates in the field. By carefully examining the registration processes in explicit-consent systems and drawing on the literature from behavioral sciences we propose that there are at least three psychological barriers that are inherent in explicit-consent systems that are hard for people to overcome and that contribute to the low sign-up rates. These psychological barriers include hassle cost – the hassle of actually registering one's consent (e.g., Bettinger, et al. 2012; Bertrand et al. 2006), the due diligence heuristic – individuals may feel they have not put in adequate effort to make an informed decision (Tsai and McGill 2011; Schrift et al. 2011; Sela and Berger 2012), and low sense of social responsibility (Slovic 2007; Wallach et al. 1964). We propose that these psychological barriers are likely operating together, contributing to low sign-up rates. Therefore, we designed and tested a number of interventions in order to overcome these barriers, and in turn increase the number of registered donors.

We conducted a large-scale ( $N = 10,043$ ) randomized controlled trial on organ and tissue donor registrations in order to test the effectiveness of our behavioral interventions, each aimed at counteracting a psychological barrier that could discourage individuals from registering. Our field experiment was conducted in collaboration and consultation with several participating government agencies and departments within one North American jurisdiction. The experiment itself was conducted at one of their service center locations.

During the experiment, we measured the daily number of new donor registrations at this location over an eight-week period.

The experiment had nine conditions in total: two control conditions (one pre-experiment and one post-experiment), two acclimation conditions that served to expose the staff to our new forms and process as well as examine the effect of giving the staff specific instructions, and five focal treatment conditions designed to establish the most effective interventions to increase organ and tissue donor registration rates. These interventions sought to reduce the hassle cost (through simplifying the registration form; treatment condition 1), increase feelings of due diligence (through handing out a brochure; treatment condition 2), and induce a sense of social responsibility (through using nudge statements that prompted emotional and/or cognitive perspective taking; treatment conditions 3-5). All interventions were accompanied with more time for the individuals to think about the donation.

In order to examine the effect of condition on an individual's likelihood of registering as an organ and tissue donor, we employed a logistic regression analysis with each of the conditions and business days dummy-coded, and fixed-effects for the customer service representatives. The dependent variable was whether or not an individual registered as an organ and tissue donor. To test the effectiveness of our interventions, we examined the odds ratios of individuals registering as organ and tissue donors in each of our five focal treatment conditions and compared them to the pre-experiment control condition, with a donor registration rate of 3.04%.

We find that three of the five focal treatment conditions significantly increased the likelihood of an individual registering as an organ and tissue donor (overall model:  $\chi^2$  (DF=13) = 106.89,  $p < .001$ ): handing out a brochure, handing out the registration form with a cognitive perspective taking nudge statement that has been successfully used online in the UK (Behavioral Insights Team 2013) and handing out the registration form with a first-person emotional perspective taking nudge statement. Individuals' odds of registering as organ and tissue donors were more than two times higher when visiting the service center during these three treatment conditions than during the pre-experiment control condition.

Together these findings contribute to our understanding of how to motivate individuals to act for the greater good. In our field experiment, we significantly increased registrations by: 1) providing more information to satisfy the due diligence heuristic, 2) promoting cognitive perspective taking and 3) promoting first-person emotional perspective taking. Each of these interventions more than doubled an individual's likelihood of registering. In addition, our paper demonstrates the power of relatively costless nudges, grounded in behavioral science research, and their profound influence on behaviors significant to economic and individual wellbeing.

For more information contact: [nicole.robaille@queensu.ca](mailto:nicole.robaille@queensu.ca)

### ***Gain without Pain: The Extended Effects of a Behavioral Health Intervention***

Daniel Mochon, Tulane University, USA\*

Deepak Patel, Discovery Vitality

Janet Schwartz, Tulane University, USA

Dan Ariely, Duke University, USA

Josiase Maroba, Discovery Vitality

Financial incentive programs are increasingly employed to improve people's health (Gneezy, Meier, and Rey-Biel 2011). While research shows that many incentive-based interventions can effectively improve a specific health behavior while in place, less is known about the extended effects for both the participants and the host firms once the intervention ends. These effects are essential to understand from both a theoretical and policy perspective because an intervention that has positive effects on a targeted behavior during the intervention, but leads to negative consequences once the program ends, or shows negative substitution effects in other domains, may not be a sustainable marketplace product.

This research begins to address this question by examining the extended effects of a behavioral health intervention: a voluntary 6-month commitment contract that significantly improved the health of grocery purchases (Schwartz et al. 2014). Member households who were already receiving a 25% discount on healthy food grocery purchases, put that discount on the line by precommitting to a 5-percentage-point increase above their household healthy food baseline. Those who met the goal kept their discount, those who did not forfeited it.

Since this precommitment intervention was run within the context of an overall health rewards program, we were able to examine the commitment device's impact beyond the specific time period and targeted behavior (nutrition). Specifically, we examined whether the effect persisted once the penalty was removed, whether the program led to substitution effects while the incentives were in place (i.e., healthier nutrition behavior leads to less exercise) and, finally, the impact of the intervention on the overall relationship between the customers and the firm running it.

**Persistence effects:** For the committed households we specifically tested whether the intervention led to habit formation (Charness and Gneezy 2009) or whether the penalty associated with the precommitment led to crowding out effects whereby less healthy purchases re-emerged once the penalty was removed (Benabou and Tirole 2003; Lepper, Greene, and Nisbett 1973). Consistent with the habit formation prediction, the committed group continued to make healthier grocery purchases during the 6-months post-intervention ( $\beta = 2.84$ ,  $SE = .95$ ,  $p < .01$ ). This persistence effect was strongest for the most loyal customers, as well as for participants who had the most money to lose during the commitment period. This result demonstrates that incentives can be catalysts to long term change, and therefore be valuable tools for improving health.

**Substitution effects:** One concern with health interventions targeting a specific behavior, is that they may lead to negative substitution effects in other domains, either because exerting self-control is depleting (Baumeister et al. 1998) or because of licensing effects (Khan and Dhar 2006). We tested for substitution effects by examining all logged exercise activity (e.g. going to the gym) during the precommitment period. In other words, we tested whether eating healthier food led consumers to exercise less. Our results show no evidence of substitution effects. Committed households exercised slightly more (though not significantly more) than the control group ( $\beta = .07$ ,  $SE = .05$ , n.s.). Interestingly, we found a significant positive effect on exercise when examining participants who had the most money on the line during the commitment period, ( $\beta = .23$ ,  $SE = .07$ ,  $p < .01$ ). These are important findings since data limitations have prevented previous research from examining this important question about substitution effects. Our results further reinforce the value of incentives as a tool for improving health, by suggesting that they do not lead to negative consequences in other domains, and may even lead to positive spillovers for at least a subset of the population.

**Loyalty effects:** While penalty-only commitment contracts may improve targeted health behaviors, this may come at the cost of customer loyalty and thus make it difficult for private firms to offer such programs. We test the effect of the intervention on customer loyalty by examining involvement with the health rewards program during the year after the commitment contract ended. We do this by testing the participants' change in status level in the program relative to the prior year. Positive numbers indicate higher status, and therefore a better relationship with the firm. Our result show that committed households showed a positive (though non-significant) change in status during the year after the intervention ended ( $\beta = .07$ ,  $SE = .12$ , n.s.). This is an important finding since most committed households forfeited their discount at least once, which could have translated into negative firm reactions. Consistent with this finding, the results of a follow-up survey suggests that committed households did not blame the firm for failures. Indeed, 68% assigned more blame to themselves than to the firm for failing to meet the precommitment goal (only 15% assigned more blame to the firm). This suggests that consumers took responsibility for their own actions, and consequently for their own failures, which mitigated any negative

feelings towards the firm. Interestingly, when asked whether they would be willing to participate if the precommitment was offered again, a full 66% said that they would put their discount on the line as a means of improving self-control while grocery shopping.

For more information contact: [dmochon@tulane.edu](mailto:dmochon@tulane.edu)

### ***From Garbage to Gift: 'Social' Recycling Promotes Happiness***

Grant E. Donnelly, Harvard Business School, USA\*

Cait Poynor Lamberton, University of Pittsburgh, USA

Rebecca Walker Reczek, Ohio State University, USA

Michael I. Norton, Harvard Business School, USA

Researchers are becoming adept at identifying ways to extract maximal happiness from the consumption process. For example, research has demonstrated that acquiring experiences make us happier than acquiring goods (Goodman, Nicolao & Irwin, 2009), and that spending money on others can yield greater happiness than spending money on oneself (Dunn, Aknin & Norton, 2008). While important, such work focuses primarily on acquisition and consumption.

In the present research, we argue that disposal choices represent an untapped source of consumer happiness. As such, we focus on social recycling, a relatively new form of 'recycling' one's possessions to others, which happens when consumers allow used goods to be acquired by an unspecified other.

As a first study, participants ( $N = 279$ ) were given a list of 20 household items (i.e., a coffee mug) to sort into different boxes that represented disposal options. Participants were randomly assigned to a: (a) trash and recycling bin, (b) trash, recycling, and social recycling bin, or (c) trash and social recycling bin. The social recycling bin was described as a bin to 'place things you no longer want, but others might. All items placed into this box will be taken to the street on trash day, and made available to your neighbors. All untaken items will be removed.' This design allowed us to test the potential benefit of a social recycling bin, and to see if differences exist because of a third disposal option. Following the sorting task, participants reported their affective state, and impressions of how their disposal decisions impacted the environment and other people.

The presence of a social recycling bin significantly reduced the number of items placed in the trash ( $p < .001$ ), and recycling ( $p < .001$ ) bins, increased positive affect ( $p = .08$ ), reduced negative affect ( $p < .001$ ), increased feelings of helping the environment ( $p < .001$ ), and others ( $p < .001$ ) regardless of the number of disposal options. Perceptions of helping mediated the relation between social recycling and positive affective benefits.

Given that perceptions of helping others influenced positive affect, we ran a second study ( $N = 298$ ) to evaluate the significance of the recipients of socially recycled items. We followed the same design as Study 1, however all participants sorted items into: (a) a trash bin, (b) a recycling bin or (c) a social recycling bin. We manipulated the recipients of the socially recycled items. Participants learned that socially recycled items would be made available to a family making an annual income of either (a) \$20,000, (b) \$40,000 or (c) \$100,000. The average income of our participants was \$32,634.12 ( $SD = \$25,820.58$ ), so these income categories represented populations that made less, about the same or significantly more than our sample. While sorting decisions were no different based on the recipients, affective states were influenced. Individuals whose items went to a family making \$20,000 reported significantly more positive affect than those whose items went to a family making \$100,000 ( $p = .02$ ). While there were no differences in perception of helping the

environment, participants who gave to families making \$20,000 or \$40,000 reported higher feelings of helping others. Again, perceptions of helping others significantly mediated the social recycling and positive affect relation.

In our third study ( $N = 222$ ), we investigate the differences between social recycling and donations. We hypothesized that social recycling is a more convenient form of donating, leading to less retention and trashing of items, and more prosocial exchange. In this study, participants listed ten possessions they no longer wanted, but other people may want or benefit from. Participants assigned to the donation condition were asked to sort each item into (a) trash, (b) keep it, or (c) take it to the nearest donation center. Those in the social recycling condition were asked to sort each item into (a) trash, (b) keep it, or (c) social recycling bin. Like our other studies, participants then reported their affective states and their perceptions of helping others and the environment.

As hypothesized, social recycling was deemed much more convenient relative to taking items to a donation center ( $p < .001$ ), and resulted in fewer items placed into the trash ( $p < .001$ ), fewer items kept ( $p = .003$ ), and more items prosocially disposed of ( $p < .001$ ). Social recyclers also reported greater positive affect ( $p = .05$ ), less negative affect ( $p = .006$ ), and higher perceptions of helping the environment ( $p < .001$ ), but no differences in helping others ( $p = .60$ ).

In a fourth study ( $N = 182$ ) participants sorted real items that would actually be trashed, recycled or made available to others. Participants came to a university laboratory and were randomly assigned to one of three conditions: (a) trash and recycling, (b) trash, recycle and social recycle, or (c) a taker of a socially recycled item. Takers did not sort; they only took items that had been socially recycled by others. When arriving to our lab, participants rated how happy they felt on a 1 (not at all) to 5 (very much) scale. They then were asked to sort 18 items placed on their desk into the available bins. Participants in the social recycling condition then took items placed in the social bin to a 'share shelf' which made the items available to participants assigned as 'takers'. Sorters then rated their current happiness after this task, while takers took an item and then reported their happiness.

Participants in the social recycling condition sorted fewer items into the trash ( $p < .001$ ) and recycling ( $p < .001$ ) bins. While there were no significant differences in happiness between conditions at time 1 ( $p = .23$ ), at time 2 social recyclers were significantly happier ( $p = .003$ ). Traditional disposers and takers did not experience any differences in happiness from time 1 to time 2 ( $p = .35$ ).

Across four studies, we find support for our hypothesis that social recycling can boost consumer happiness, likely because of increased feelings of helping.

For more information contact: [gdonnelly@hbs.edu](mailto:gdonnelly@hbs.edu)

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

### ***Individual Papers: Visual Effects in Consumption***

#### ***Facing Dominance: Anthropomorphism and the Effect of Product Face Ratios on Consumer Preferences***

Ahreum Maeng, University of Kansas, USA\*

Pankaj Aggarwal, University of Toronto, Canada

Anthropomorphism research suggests that people often think of products in humanlike terms and interact with them as they would interact with other people (Aggarwal and McGill, 2007). Although much research has investigated the effect of perceiving products in human versus product terms, there is little investigation on the extent to which interacting with anthropomorphized products mirrors interacting with humans. The goal of the current research is to fill this gap.

In particular this research investigates the possibility that much like human face perception, consumers actually infer personality traits based on the ‘facial structure’ of anthropomorphic products, and interact with them based on these inferences. Drawing upon prior research showing that high face width-to-height ratio (*fWHR*: bizygomatic width divided by upper-face height) is attributed to high dominance characteristic in a person (e.g., Lefevre et al., 2013), we propose that consumers perceive anthropomorphic products with high *fWHR* also with high dominance, and leverage these inferences to shape their preferences. However, we suggest that the effect of perceived dominance on overall evaluation in person and product face perception would be very different. That is, while people perceived as having highly dominant faces are evaluated less positively, products perceived as having highly dominant faces are hypothesized to be evaluated more positively compared to those having less dominant faces. We argue that unlike dominant people, consumers employ dominant products to elevate their own relative rank in a social hierarchy. This novel research contributes to extant literature on identity signaling and conspicuous consumption as well as the growing stream of work on anthropomorphism, by underscoring the influence of product design in general and face ratio in particular.

Study 1 tested whether products with higher *fWHR* are perceived as more dominant and whether perceived dominance mediates the overall perceptions of the product. Four hundred eighty five participants were randomly assigned to one of three levels automobile *fWHR* and three levels human *fWHR*. Four computer generated faces and four automobile images were manipulated in terms of their width-to-height ratio using Facegen modeler and Adobe Photoshop (ratios: high 2.13 vs. medium 1.9 vs. low 1.7). Participants indicated their impressions of the stimuli in terms of the degree of perceived dominance of and liking for the automobile as well as the human faces. The results showed that participants perceived both human faces and automobile images with high *fWHR* as more dominant (human:  $p < .001$ ; automobile:  $p < .04$ ). Further, as predicted, participants disliked human faces with high *fWHR* ( $p < .001$ ) while they liked automobile images with high *fWHR* ( $p < .01$ ). Mediation analyses revealed significant indirect effects of *fWHR* on preferences for both human faces and automobile images through dominance ratings (95% CI human faces: -.68 and -.45; automobile images: -6.8 and -4.5), suggesting that perceived dominance mediated the influence of *fWHR* on both person and product preferences in distinct ways. We suggest that the effect of *fWHR* on person and product preference is distinct because people perceive the human as other, whereas they perceive the product as part of self. Consequently, we predict that the effect observed in Study 1 will reverse when the high ratio human face is presented as belonging to an in-group person and the high ratio product image is presented as belonging to an out-group. We test this in Study 2.

Three hundred ten participants were randomly assigned to one of six conditions: 2 group memberships (in- vs. out-group) x 3 levels *fWHR* for both human faces and product images. Each participant was randomly shown pictures of four human faces at one ratio level and four automobile images at another ratio level. The results showed that participants rated high *fWHR* human face and product image as more dominant (humans:  $p < .001$ ; automobiles:  $p < .01$ ). Furthermore, although the main effect of ratio on human face and product image evaluation was replicated (humans:  $p < .03$ ; automobiles:  $p < .001$ ), further analysis revealed that high-ratio out-group human faces were disliked the most, followed by medium-ratio and low-ratio faces ( $p < .012$ ). However, as predicted, when the same faces were presented as in-group, the ratio effect vanished ( $F < 1$ ). Additionally, compared to the high-ratio out-group automobile images, high-ratio in-group automobile images were liked significantly more, followed by medium-ratio and low-ratio faces ( $p < .05$ ). However, as predicted, when the same products were presented as out-group, the ratio effect vanished ( $F < 1$ ). Furthermore, mediation analyses using out-group human-face and in-group automobile image data revealed significant indirect effects of the ratio on preferences for the faces/images through dominance ratings (human: 95% CI: -.38 and -.099; automobile: 95% CI: .02 and .32).



The goal of Study 3 was to identify a boundary condition in which the effect of face/image ratio is more pronounced with a competitive goal but vanishes with an affiliation goal. Four hundred participants were randomly assigned to one of nine conditions: 3 goals (competition vs. affiliation vs. control) x 3 levels  $fWHR$  in a between-subjects design. The goals were manipulated using scenario of renting a car (for an important business trip vs. for a very special date). Perceived dominance and preferences for the product were measured as before. The results of the control condition replicated those of studies 1 and 2. More interestingly, as predicted, this effect was more pronounced among participants in the competitive-goal condition ( $p < .001$ ); however, in the affiliation goal condition, neither perceived dominance nor preferences for the car were influenced by ratio ( $F < 1$ ). Mediation analyses revealed that perceived dominance mediated the effect of ratio on preferences, and this indirect effect was significantly moderated by type of goal (95% CI: .01 and .14). We have conducted two additional studies that go deeper into the process by examining the moderating roles of public and private consumption as well as of the need for dominance versus need for prestige on the effect of  $fWHR$  on dominance and preferences. We look forward to discussing these results at the conference.

For more information contact: amaengwork@gmail.com

### ***The Visual Minority Effect on Children's Choice Behavior***

Michal Maimaran, Northwestern University, USA\*

Yuval Salant, Northwestern University, USA

Convincing children to eat fruits and vegetables is a constant battle parents and caregivers face. Given children's resistance to explicit persuasion, it is important to find other ways to encourage them to eat healthy. In this research, we ask how the composition of choice sets children face influences their choice behavior, and whether it is possible to change the choice-set composition in ways that trigger children to make healthier food choices.

We study how young children choose from sets in which each option appears multiple times. We propose that when options in the set are visually different from one another, the option that appears the fewest number of times in the set, called the minority option, stands out visually relative to other options. Because young children are guided by perception, they will tend to choose this minority option even if they prefer another option in the set. We call this tendency to choose the minority option when options are visually different *the visual minority effect* and we demonstrate it in various contexts.

Motivated by concerns about childhood obesity we study whether the effect extends to environments in which children have relatively strong preferences for one item (e.g. crackers) over another (e.g. fruits). We show that indeed the proportion of children choosing a fruit over crackers increases when the fruit is positioned as the minority option.

We conducted four studies to test our theory and its policy implications. Studies 1-3 were conducted in a pre-school and involved individual sessions in which 4 to 5.5 year old children interacted with an experimenter who was blind to the research hypothesis. Studies 1 and 2 demonstrate the visual minority effect in various choice tasks. Study 3 illustrates that the effect may lead children to favor fruits over crackers. Study 4 illustrates that adults do not demonstrate the effect.

In study 1, children ( $N=61$ ) chose an apple, a bag of crackers, a magnifying-glass and a bag to put all their chosen products. Specifically, about half of the children choose an apple from a bowl with five Granny-Smith apples and two Red-Delicious apples (i.e., Red-Delicious is minority). The rest choose from a bowl with five Red-Delicious apples and two Granny-Smith apples (i.e., Granny-Smith is minority). Children also chose a bag of Wheat-thins or Cheez-it crackers, such that either the Wheat-thins or the Cheez-it was the minority option.

Children then chose a yellow or red bag to put their apple and crackers, such that either the yellow or the red bags were the minority option. Finally, children chose a green or blue magnifying-glass, such that either the green or the blue magnifying-glass was the minority option. See figure 1 for illustration of all choice sets. In all tasks here and in studies 2 and 4 the minority option appears twice in the set and the other option appears five times. In studies 1-3, children put their chosen products in their individual lockers so that other children could not observe their choices.

In line with our theory, children tend to choose the minority option when options are visually different: The proportion of children choosing a particular apple type increases by 31 percentage points when this apple type becomes the minority option. For the Red-Delicious apple, the proportion increases from 50% to 81% and for the Granny-Smith apple from 19% to 50%. Similarly, when a particular bag becomes the minority option, the likelihood of choosing it increases by 22 percentage points. We observe similar increase for the magnifying glass (35 percentage points). See Table 1 for detailed results.

In contrast, when options are visually similar, as in the crackers task, becoming the minority option has no effect on children's choices. About 60% of the children choose cheez-it crackers in both conditions. Clearly children recognize the different types of crackers and make deliberate rather than random choices. Otherwise, the proportion of children choosing the minority option should have been  $2/7 \approx 29\%$ , which is very different from the results when cheez-it is the minority option (57%).

Study 2 further demonstrates the importance of visual differences between the options in driving the visual minority effect. Forty children chose a photo featuring a puppy from a set with photos of white puppies and light brown puppies (options are visually similar) and a finger puppet from a set with zebra and giraffe finger-puppets (options are visually different).

Replicating study 1's results regarding visually similar options, about 62% of the children chose the white-puppy photo in both conditions. As in study 1, children made deliberate rather than random choices, as the proportion choosing white-puppy when it is the minority option (61%) is different from random choice (29%). The finger-puppet task replicates study 1's results regarding visually different options: When a particular finger puppet became the minority option, the likelihood of choosing it increased by 35 percentage points.

Study 3 provides some evidence that the visual minority effect may be policy-relevant by illustrating that children favor a fruit over crackers when the fruit becomes the minority option. Fifty-six children chose between grapes and crackers. About half the children chose from a set with two boxes of grapes and six boxes of crackers, and the rest chose from a set with equal number of boxes of grapes and crackers. When grapes become the minority option, 52% of the children chose grapes compared to 26% in the control condition. This finding may hint at straightforward ways to encourage children to choose fruits.









Study 4A (N=70) and 4B (N=55) show that adults (mean age=20) do not show the visual minority effect. In study 4A they chose an apple, as in the apple task in study 1. In study 4B, they chose between yellow and green highlighter, such that either the yellow or the green highlighter were the minority option. In both tasks, adults do not favor the minority option (see table 1). Thus, it seems that children's sensitivity to visual cues indeed plays a role in driving the effects we observe. Moreover, it seems that general theories of uniqueness-seeking and scarcity cannot explain the discrepancy between adults' and children's behavior.









**Table 1: Summary of results**

	Minority	Other	Statistic Test
S1: Share of Red-Delicious apple	81%	50%	$\chi^2 (1, N = 61) = 6.34, p = .012$
S1: Share of Granny-Smith apple	50%	19%	
S1: Share of Cheez-It crackers <sup>1</sup>	57%	64%	$p > .2$
S1: Share of Wheat Thins crackers	36%	43%	
S1: Share of green magnifying glass	64%	29%	$\chi^2 (1, N = 61) = 7.47, p = .006$
S1: Share of blue magnifying glass	71%	36%	
S1: Share of red bag	56%	34%	$\chi^2 (1, N = 61) = 2.9, p = .088$
S1: Share of yellow bag	66%	44%	
S2: Share of zebra	55%	20%	$\chi^2 (1, N = 40) = 5.23, p = .022$
S2: Share of giraffe	80%	45%	
S2: Share of white puppy	61%	64%	$p > .2$
S2: Share of light-brown puppy	36%	39%	
S3: Share of grapes	52%	26%	$\chi^2 (1, N = 56) = 3.90, p = .048$
S4A: Share of Granny-Smith apple	53%	68%	$p > .2$
S4A: Share of Red-Delicious apple	32%	47%	
S4B: Share of yellow highlighter	67%	63%	$p > .2$
S4B: Share of green highlighter	37%	33%	

<sup>1</sup> Seven children did not choose crackers due to allergies.

**Figure 1: Illustration of choice sets**

Apples task (Studies 1 and 4A)	Red Delicious apple minority 	Granny Smith apple minority 
Crackers task (Study 1)	Cheez-It minority 	Wheat Thins minority 
Shopping-bags task (Study 1)	Red minority 	Yellow minority 
Magnifying-glasses task (Study 1)	Blue minority 	Green minority 

Finger-puppets task (Study 2)	Zebra minority 	Giraffe minority 
Puppy-photo task (Study 2)	White puppy minority 	Light-brown puppy minority 
Grapes-crackers task (Study 3)	Grapes minority 	Control 
Highlighters task (Study 4B)	Yellow minority 	Green minority 

For more information contact: [m-maimaran@kellogg.northwestern.edu](mailto:m-maimaran@kellogg.northwestern.edu)

***The Impact of Animated Display on Trajectory Visualization***

Junghan Kim, State University of New York at Buffalo, USA\*

Arun Lakshmanan, State University of New York at Buffalo, USA

Individual investors often visit websites such as Google Finance to obtain information of stock prices. Similarly, consumers often check retail price histories via price-tracking websites (e.g., camelcamelcamel.com) to get a good deal. As such, examining temporal variations in key variables such as price, quality, consumer ratings etc. provides an informational aid for individuals’ decision-making. Notably, many information providers commonly utilize graphical displays to reduce informative ambiguity (Smith et al. 2002). Further, with the enhancement of multimedia technologies such as JavaScript or Flash, trajectory information is nowadays displayed in animated forms (Tversky et al. 2002). Although animation is frequently used for information visualization, there is little systematic research empirically examining its impact in consumer settings. This paper argues and demonstrates that when trajectory information is presented in an animated (vs. static) form, consumers infer greater variability in the information being shown. This leads to profound downstream consequences for consumer information processing and decision-making.

We base our proposition on insights that motion can be a meaningful inferential cue for higher-level judgments (Scholl and Gao 2013). In animated line graphs, motion can be used to sequentially and physically trace temporal variations across a curve. Thus, as a visual aid, motion embedded in animated line graphs would enhance the degree to which consumers notice how the given variable changes between each time-point in a trajectory curve. Moreover, since visually highlighted dimensions of graphic display (such as motion-embedded trajectories) are likely to be more impactful in shaping perceptions (Lurie and Mason 2007), the animated display of variation (as opposed to a static display) should enhance consumer perceptions of data variability. As such, animated display provides more fine-grained cues that enhance perceptions of temporal variations. Moreover, since human vision is evolutionarily sensitive to moving

objects (Pratt et al. 2010), presenting trajectories in animated form may lead to unique consequences. We investigate our hypothesis in substantively relevant contexts: online customer ratings (Study 1), online price tracking (Study 2) and stock investing (Study 3).

Study 1 ( $N=117$ ) investigates our core hypothesis in the online customer-rating context where consumers often see variations in ratings as a reflection of product quality (He and Bond 2015); we examine this in the context of the firm's age as a moderator. Older firms are expected to provide greater quality stability (i.e., lower variability) because they have well-established production processes (Desai et al. 2008). In contrast, consumers usually expect greater variability in product quality from younger firms as they have relatively insufficient experience (O'Sullivan and Abela 2007). Since animated display of customer ratings visually enhances trajectory variations, it is natural to expect perceptions of the variability in quality to be enhanced by animated (vs. static) visualization in the case of older firms. In contrast, since younger firms are *a priori* expected to have greater variations in product quality, there should be no difference in variability perceptions by display type. To test this hypothesis, in Study 2 participants were shown an ad about chocolates sold at a fictitious candy shop. The candy shop was framed to have opened either in 1910 (older firm) or in 2015 (younger firm). Then participants were shown a line graph depicting 5-month customer ratings for the chocolates from the respective shop. In the animated condition, customer-rating trajectory was sequentially traced with movement; in the static condition the same trajectory was presented in one go without movement. Next, participants rated variability in chocolate quality (certain/uncertain, stable/unstable, settled/unsettled, and sure/unsure;  $\alpha = .94$ ). A 2 (firm age: older/younger)  $\times$  2 (graph type: animated/static) ANOVA on perceived product quality variability revealed, as predicted, that for the older shop, variability perceptions were greater in the animated (vs. static) graph, while for the younger shop, variability perceptions were equivalent across graph type (see Table 1).

Study 2 ( $N=73$ ) extends our examination to the online price-tracking context where variations in price histories for products are an indicator of price volatility (Grewal and Marmorstein 1994). Thus, one contextual moderator that may mitigate the variability-enhancing effect of animated display is the presence of a price discount. This is because monetary value offered by a price discount is readily incorporated into price assessment (Chandran and Morwitz 2006) and thus, can compensate for enhanced volatility perceptions. In Study 2, participants were shown a line graph depicting the recent 3-month price history of a fictitious LED TV; this was presented either in animated or static form. Subsequently, one half of the participants were shown a 10% price discount coupon while the other half was not shown this discount. As predicted, a 2 (price discount: presence/absence)  $\times$  2 (graph type: animated/static) ANOVA on price volatility perceptions ( $\alpha = .91$ ) revealed that volatility perceptions were greater in the animated (vs. static) graph when no promotion was offered, but volatility perceptions become equivalent across graph type when the price discount was present (see Table 1).

Study 3 ( $N=112$ ) further extends our examination to the context of stock investing where variations in stock price trajectory signal financial risk (Raghubir and Das 2010) and tests the moderating role of investors' goals. We hypothesize that for day-traders whose goal is maximizing profits by utilizing short-term price variations, animated display would not detrimentally affect risk perceptions since enhanced trajectory variations represent an opportunity to make profits. However, for long-term investors whose goal often involves buying/holding stocks over longer durations and avoiding unnecessary variations, enhanced variations (due to animated display) may trigger greater risk perceptions. In Study 3 participants were asked to imagine themselves as day-traders or long-term investors, and then shown an animated or static line graph describing monthly stock prices for a fictitious NASDAQ company. As illustrated in Table 1, a two-way ANOVA on risk perceptions (not at all risky/risky, unsafe/safe;  $\alpha = .82$ ) revealed that for long-term investors, risk perceptions were greater in the animated (vs. static) condition, while for day-traders risk perceptions were equivalent across graph type. Further, for long-term investors, willingness to invest (WTI) was greater in the static (vs. animated) graph while for day-traders WTI was statistically equivalent across graph type. A moderated mediation analysis found that the indirect effect of graph type on WTI through risk perceptions was significant only for long-term investors as theorized.

This paper extends the literature on consumers' visual biases in data-based judgments (Raghubir and Das 2010). While past research focuses on different forms of static visual presentation (e.g., bar/line graphs, box chart), to the best of our knowledge this is the first to

examine the effect of *animated* graphic display upon consumer inference and decision making. Substantively, by taking a multi-domain approach, we demonstrate that the animated display effect is robust across diverse consumer settings and thus, has broad implications for consumer welfare.

**TABLE 1**  
**Results for Studies 1-3: Means and Standard Deviations**

	Study 1		Study 2		Study 3	
	Firm's Age		Price Discount		Investor Goal	
	Older	Younger	Absence	Presence	Long-term Investor	Day-Trader
<b><i>Product Quality Variability</i></b>						
Animated	4.95 <sup>a</sup>	4.53 <sup>a</sup>				
Static	4.15 <sup>b</sup>	4.88 <sup>a</sup>				
<b><i>Price Volatility</i></b>						
Animated			6.15 <sup>a</sup>	5.15 <sup>a</sup>		
Static			5.23 <sup>b</sup>	5.38 <sup>a</sup>		
<b><i>Financial Risk</i></b>						
Animated					4.93 <sup>a</sup>	4.72 <sup>a</sup>
Static					4.27 <sup>b</sup>	5.06 <sup>a</sup>
<b><i>Willingness to Invest (\$)</i></b>						
Animated					2999.26 <sup>a</sup>	4334.56 <sup>a</sup>
Static					5472.58 <sup>b</sup>	2918.56 <sup>a</sup>

Note: Means within the same row that do not share a common superscript differ at  $p < .05$ .

Raw means are reported in each cell.

For more information contact: [junghank@buffalo.edu](mailto:junghank@buffalo.edu)

***Do We Look Like Our Names? Faces Match Given Names***

Yonat Zwebner, Wharton Business School, USA\*

Anne-Laure Sellier, HEC Paris, France

Jacob Goldenberg, IDC, Israel

Ruth Mayo, Hebrew University, Israel

*Could it be that we look like our name?* We present seven studies suggesting exactly that. By simply looking at an unfamiliar face, people accurately select the person's true name among several, significantly above chance level. Figure 1 shows an example of a trial choice. Upon looking at the face in the figure and considering the four options given, participants chose the name Dan to be his true name in 38% of the cases, which is above the 25% chance level. Beyond the interesting convergence individuals' show by choosing the same name, surprisingly, their choice was correct: This name is in fact the real name of the person in the picture.

Try to determine, from among the offered list of names, which is the true given name of the person in the picture.



1. Jacob
2. Dan
3. Josef
4. Nathaniel

*Figure 1.* Example of a trial in our studies.

*Note:* For randomization purposes, the name Dan appeared with several different filler names for different participants.

The current research aim is to test the match between faces and names in the real world and its consumption and managerial implications. In Studies 1A and 1B, we establish the face-name match by showing that people can accurately identify a person's name based only on a headshot. We use different methodologies for selection of filler names. In study 1A participants accurately matched the target's true name in 28.21% ( $SE=0.93\%$ ) of the cases, which is significantly greater than chance (20%,  $t(120)=8.87$ ,  $p<.001$ ,  $d=.81$ ). This was replicated in Study 1B (27.50% ( $SE=1.82\%$ ),  $t(17)=4.12$ ,  $p<.001$ ,  $d=.97$ ). In Studies 2, 3, and 4, we test several alternative explanations and methodological issues that might account for our results. Specifically, in Study 2 we control for possible confounds related to the names such as the order in which we presented them, the method we used to choose them and their frequency in the general population by comparing the case of a "regular" facial condition to a control condition where the face is hidden. In addition, Study 2 controls for age and ethnicity of the target stimuli. Results confirm that participants in the displayed-facial condition accurately matched the target's name in 24.97% ( $SE=1.95\%$ ) of the cases, which is significantly greater than chance (20%,  $t(54)=2.57$ ,  $p=.013$ ,  $d=.36$ ). By contrast, as expected, in the hidden-facial condition, participants failed to accurately match the target's name above chance level (20.44% ( $SE=1.76\%$ ) vs. 20%,  $p>.250$ ). In Study 3, we test the face-name match for fraternal twins, thereby providing a stringent test to rule out any kind of alternative explanation related to targets' socioeconomic background, including age and ethnicity. Participants chose the correct given name in 55.80% ( $SE=2.74\%$ ) of the cases, which is significantly above chance (i.e., 50%,  $t(59)=2.12$ ,  $p=.038$ ,  $d=.27$ , 95%). In Study 4, we replicated the face-name match in a different country and culture: Participants accurately chose the target's given name in 40.52% ( $SE=1.41\%$ ) of the cases, which is significantly greater than chance (25%,  $t(115)=10.96$ ,  $p<.001$ ,  $d=1.02$ ).

The face-name match is found to be culture-dependent (Study 5) as participants were able to match name to faces from their own culture but were unable to match names to faces from another culture, demonstrated by a face nationality x participant nationality significant interaction ( $F(1, 233)=79.61$ ,  $p<.001$ ). The underlying mechanism is suggested to be one of a self-fulfilling prophecy, as name usage is found to be essential: The face-name match is significantly attenuated for participants who do not use their given name (rather use their exclusive nickname) (Study 6). Specifically, the probability of choosing the true given name was significantly higher in the case of faces with no nickname (52.29% ( $SE=3.59\%$ )), compared to faces of individuals who typically use an exclusive nickname and appeared with

either their given name (34.91% ( $SE=3.30\%$ ),  $t(39)=4.17$ ,  $p<.001$ ,  $d=1.34$ ) or exclusive nickname (19.15% ( $SE=2.67\%$ ),  $t(39)=7.21$ ,  $p<.001$ ,  $d=2.31$ ). Together, these studies suggest that our facial appearance changes over time to eventually represent the expectations of how we should look according to the face-name schemas we share.

Finally, we suggest that the existence of face-name matches in real life has consumption and social psychological implications. Looking at the matching ability across the different faces in the various studies, one sees variation among the faces: For some targets, their faces have a good fit with their name, whereas for other targets their face does not fit their name at all. Clearly, some people have a name that perfectly matches their face, while others do not. These varying levels of congruency that people have between their face and name may be another individual characteristic, eventually influencing consumption decisions. We discuss the consequences of this possible face-name congruency characteristic. For example, in a learning face-name task, in one condition, the experimenter arbitrarily chose names for faces, whereas in the other, participants chose names that “fit” the faces. Participants recalled better the names that they assigned compared to names arbitrarily assigned (Cohen & Bruck, 1993). Similarly, when morphed faces and names were not ideally matched, participants learned the matching more slowly than when faces and names were well matched (Lea et al., 2007). These differences may be the result of the congruency level of the face and name, affecting one’s encoding and then recall of the information. Therefore, the different level of fit between a person’s name and his/her facial appearance may have important consumption consequences.

For more information contact: [yonatz@gmail.com](mailto:yonatz@gmail.com)

## ***Individual Papers: Cognitive processes in judgment and decision-making***

### ***(Emotional) Reference Point Formation: An Eye-Tracking Experiment***

Milica Mormann, University of Miami, USA\*

Luke Nowlan, University of Miami, USA

Over half of U.S. adults invest in the stock market (Gallup’s Annual Economy and Finance Survey 2013) yet little is known about how they form reference points. Reference points influence investor behavior because financial outcomes are coded as gains or losses relative to the reference point. For example, imagine that you purchased a stock at \$40 per share. Six months later the stock is trading at \$25. In another 6 months it bounces to \$60 per share before lowering to \$35 per share yet another six months later. What is your reference point in this situation? The literature suggests that various price points can be used by investors as a reference point (Baucells, Weber, and Welfens 2011), such as the initial purchase price (Shrefin and Statman 1985; Tversky and Kahneman 1991), historic high price (Heath et al. 1999; Gneezy 2002) or current stock price (Weber and Camerer 1998). However, it is not clear how exactly reference points are formed (i.e., which information is used most often by investors) or “how multiple reference points compete and combine” (Kahneman 1992).

Here, we use eye-tracking to examine how people form their reference points, i.e., what information they take into account as they form reference points. In addition, we investigate how incidental emotions affect reference point formation. Recent literature has shown that emotions influence financial decisions at the market level (e.g., Edmans, Garcia, and Norli 2007) but little is known about the underlying mechanism.

The experiment consisted of two seemingly independent tasks. In Task 1, upon entering the lab, participants were asked to watch a video and answer some related question. The purpose of the task was to induce incidental emotions by showing either a happy, fearful, or



emotionally neutral video, as was done in previous research (e.g., Lee and Andrade 2011). The videos were selected in an online pretest while ensuring that they do not differ in terms of arousal. Fear was chosen because it is known to increase uncertainty (Raghutan and Pham 1999), while happiness, on the other side, has been found to increase feelings of certainty (Han, Lerner and Keltner 2007).

After completing Task 1, twenty-two participants completed Task 2 in which they were told that they own a set of stocks. They viewed stock charts that depicted stocks' performance over the previous 52 weeks and were asked to determine their "neutral selling price" for each stock, i.e., their reference point (Baucells, Weber, and Welfens 2011). The stock charts were created so as to contain clear visual highs and lows, in addition to the purchase and current price. Eye-tracking recorded participants eye-movements 60 times per second as they examined the stocks and formed their reference points. Four regions of interest were created (the purchase, high, low, and current price) and we recorded the number and duration of fixations on each region. This allowed us to determine the extent to which participants consider each piece of information as they form their reference points.

Our eye-tracking results revealed that, as subjects form their reference points, the purchase and current price receive most attention, followed by highs, while lows receive very little attention. In addition, we found that incidental emotions significantly influence reference point formation: relative to those experiencing positive emotions, investors experiencing negative emotions form significantly lower reference points. Eye-tracking results reveal the underlying mechanism: incidental emotions influence how investors allocate their attention to stock charts because investors exposed to fearful content focus primarily on the current price, whereas those exposed to the happy video focus on the purchase price. This finding is consistent with the existing literature that shows that "fear is near" (Mobbs et al. 2007) and that it focuses people's attention on the current situation (Labroo and Patrick 2009) as they attempt to "fix it" and reduce some of the uncertainty. At the same time, those exposed to happy emotions focused more on the big picture (Labroo and Patrick 2009) considering their purchase price more than other information when making financial decisions.

In sum, this research shows that investors mostly consider the purchase and current price when forming their reference points. At the same time, incidental emotions influence how they allocate their attention to financial information, and as a result, this differential attention allocation affects their reference points. These findings have implications for individuals' financial decision-making and help us better understand various market level phenomena, such as the disposition effect where people hold losing stocks too long and sell winners too soon.

For more information contact: milim@miami.edu

### ***Risk is Weird: The Weirdness of Risky Transactions Causes 'Risk' Aversion***

Robert Mislavsky, University of Pennsylvania, USA\*

Uri Simonsohn, University of Pennsylvania, USA

What causes risk aversion? The dominant explanations, Expected Utility Theory and Prospect Theory, propose that risk aversion occurs because outcomes impact utility non-linearly, and because subjective probabilities differ from objective ones. However, risk aversion is often measured by comparing willingness to pay for a straightforward transaction, such as buying a gift card, with willingness to pay for a risky transaction of equal expected value, such as paying to flip a coin that could pay out a gift card. This assumes that risk itself is the only difference between risky and riskless transactions. We propose that these transactions are not only risky, but also include atypical, unfamiliar or unjustified characteristics; they are "weird." Lower valuations are then driven, in part, by reluctance to engage in weird transactions.

In our first four studies, we rely on the uncertainty effect paradigm (Gneezy, List, & Wu, 2006), an extreme form of risk aversion where risky gambles are valued less than their worst possible outcomes. However, we manipulate risk and weirdness independently, disentangling the two potentially confounding factors. We find that weirdness accounts for the preponderance (if not the totality) of the uncertainty effect previously attributed to risk.

In Study 1, participants valued either a \$50 gift card (riskless and weirdless), the opportunity to open a box and take their choice of a \$50 Target or \$50 Walmart gift card (riskless and weird), or the opportunity to open a box and take a \$50 Walmart or \$50 Target gift card, without knowing which they are taking (risky and weird). Replicating the uncertainty-effect we found that participants valued the riskless (and weirdless) option more than the risky one (\$36.96 and \$23.48 respectively). Weirdness, however, rather than risk, accounted for the majority of this difference, as the risk-free but also weird transaction was valued well below the risk-free weird-free one (\$27.58). In this study, then, risk accounts at most for 30% of the uncertainty effect.

We rule out various alternative explanations and replicate the overall pattern of results in the next three studies. In Study 2, we added a condition with only one gift card inside a box, showing that the results are not caused by giving up a potential outcome.

In Study 3, we use a different source of weirdness: buying a token that can be traded for a gift card. In the riskless but weird condition the token was bought and then traded for a gift of known value, in the uncertain condition the token was traded for one of two gifts, determined by flipping the coin. Replicating the uncertainty effect... Gift cards in the riskless and weirdless condition (\$41.76) were valued higher than in each of the token conditions (risky: \$28.10, riskless/1 outcome: \$30.11, riskless/2 outcomes: \$31.70; all  $p < 0.001$ ). In Study 4, we increase the variance in possible payoffs, using gift cards worth either \$50 or \$100. The uncertainty effect is strongly attenuated in the box scenarios (\$50 box: \$29.44, risky box: \$25.23;  $p = 0.16$ ) and eliminated in the token scenarios (\$50 token: \$31.64, risky token: \$37.23;  $p = 0.11$ ). In Study 5, we introduce an approach for comparing the weirdness of different conditions in experiments, and find that people find our weird scenarios (opening boxes and buying tokens) as weirder than buying gift cards outright. Specifically, participants are shown three equivalent transactions from Studies 1-3. That is, they are shown the *buy gift card outright*, *buy token*, and *open box* versions of either the risky, riskless/1 outcome, or riskless/2 outcome questions. Consistent with a weirdness aversion account of the uncertainty effect, a majority of participants ( $P = 75\%$  across all conditions) viewed the *buy gift card outright* questions to be the least weird, a pattern that held in each individual condition ( $ps < 0.01$ ).

The explanation we propose, that people are averse to transactions with unexplained, unusual, or unfamiliar (“weird”) characteristics, can be considered a generalization of ambiguity aversion, especially of explanations based on an aversion to missing information (Frisch & Baron, 1988) and to comparative ignorance (Fox & Tversky, 1995). An important distinction is that weirdness, as our experiments attest, can exist in the absence of risk, vastly expanding the type of situations where this basic preference may be consequential.

In many behavioral research studies, as it was with the uncertainty effect paradigm, researchers compare people’s reactions to stimuli that, unintentionally, have varying levels of weirdness. Weirdness, in other words, could be behind additional effects currently incorrectly attributed to other causes. Researchers could run a version of our Study 5 to protect against this possibility.

Outside of the artificial world of social science research, moreover, transactions naturally differ in how unusual, unjustified, or uncommon they are. The magnitude of the effects we document here suggest that considering such weirdness could substantially help social scientists and policy makers better explain and motivate behavior.

For more information contact: [rmisl@wharton.upenn.edu](mailto:rmisl@wharton.upenn.edu)

## *Beyond Cognitive Control: Affective Forecasting and Self-Regulatory Success*

Hristina Nikolova, Boston College, USA\*

Cait Lambertson, University of Pittsburgh, USA

Readers of the self-control literature could infer that self-control represents a battle of the mind and the heart, with the mind prompting restraint and the heart prompting indulgence (Shiv and Fedorikhin 1999). When trait self-control operates, cognitive processes effortfully exert control over impulsive tendencies (Muraven and Baumeister 2000). Then, when cognition is impeded, emotions drive consumption, generally leading to greater indulgence (Shiv and Fedorikhin 1999).

In the present paper, we argue that cognition and emotion cannot be so neatly divided with regard to their impact on self-control. Rather, we suggest that individuals' affective forecasting ability (AFA) – a cognitive skill that determines the accuracy of one's predictions about the emotional outcomes of an experience - explains self-regulatory behavior above and beyond trait self-control. This insight is important for two reasons. First, consumers' affective forecasting accuracy is a skill, not a limited resource such as trait self-control (Muraven and Baumeister 2000). Thus, affective forecasting errors can explain self-control failures even in cases where depletion is unlikely. Second, as it is a cognitive skill, affective forecasting can be improved through simple debiasing interventions, thereby improving restraint without attempting to alter a stable internal trait.

To substantiate these arguments, we first developed a six-item affective forecasting accuracy measure (AFA, sample item: "I usually know how my decisions will make me feel in the future;"  $\alpha=.94$ ). The scale was validated in Study 1 using a standard predictor-experiencer paradigm: Seahawks/Patriots fans who scored higher on the AFA had lower forecasting errors in predicting how they would feel after their team lost/won the 2015 Super Bowl ( $b=-.21, t(117)=-3.04, p=.003$ ). The scale also showed acceptable levels of test-retest reliability ( $ICC=.71$ ) and theoretically appropriate levels of convergent and discriminant validity.

Studies 2A and 2B both establish nomological validity of the AFA scale and distinguish it from the trait self-control scale (Tangney et al. 2004). A pretest revealed that consumers' self-control decisions are more affect-driven in the food and time management domains and more cognitive-driven in the money domain. As such, we anticipated that AFA will have a stronger predictive power in the former two domains, while trait self-control will be a more powerful predictor of financial self-control decisions. In line with these predictions, Study 2A ( $n=161$ ; 45% male) revealed that trait self-control predicted the amount of money allocated to indulgences in a money budgeting task ( $b=-2.89, p=.003$ ), but AFA was not a significant predictor ( $p=.17$ ). In contrast, AFA predicted the time allocated to having fun in a time budgeting task ( $b=-2.48, p=.04$ ) and the amount of calories and fat in a food selection task ( $b=-27.50, p=.05$  and  $b=-3.10, p=.005$ ). Conversely, trait self-control did not emerge as a significant predictor of self-control decisions in the time management and food domains ( $p's > .40$ ).

Study 2B ( $n=52$ , 51% male) replicated the food domain findings using a real self-control decision (i.e., a choice between an apple and a cupcake). Results showed that the higher participants' AFA was, the less likely they were to select the indulgent snack ( $b=-.81, p=.03$ ). Importantly, even after controlling for trait self-control ( $b=-.20, p=.70$ ), AFA still predicted participants' snack choice ( $b=-.72, p=.07$ ).

Study 3 examines the types of mispredictions that undermine the self-control of low AFA individuals. Participants ( $n=72$ , 35% male) first completed the AFA scale. After a filler task, participants were asked to imagine a self-control scenario in which they had to decide between going to a birthday party (vice) and studying for an exam (virtue; Hung and Mukhopadhyay 2012). Participants then forecast the self-conscious (guilt/pride) and hedonic emotions (pleasure/ deprivation) they would experience if they make each decision. Finally, participants indicated what they would do in this situation (1="definitely study" and 7="definitely go to the party.")

The higher participants' AFA was, the less likely they were to go to the party ( $b = -.44, p < .001$ ). Furthermore, as AFA rose, individuals forecasted lower levels of negative hedonic emotions (deprivation) from studying for the exam ( $b = -.26, p = .06$ ). AFA was also a marginally significant predictor of positive self-conscious emotions (pride) associated with the virtuous decision ( $b = .18, p = .08$ ). However, AFA did not predict forecasted negative self-conscious emotions (guilt) or positive hedonic emotions (pleasure) associated with the vice decision ( $p$ 's  $> .12$ ). Most importantly, mediation analysis revealed that only the predicted negative hedonic emotions associated with the virtuous decision mediated the relationship between participants' AFA and their preference to attend the party (95% CI:  $-.12, -.009$ ).

Using this insight, Study 4 tests an intervention designed to improve the accuracy of forecasting negative hedonic emotions associated with virtue consumption. We use surrogation, or using other people's affective reactions, as a debiasing strategy (Gilbert et al. 2009). Study 4 ( $n = 255$ ; 58% male) used a 2 cell (control/debiasing intervention) between-subjects design with AFA as a second continuously measured factor. Participants were notified that they would participate in a tasting test and asked to choose between a milk chocolate (vice) and a dark chocolate (virtue). Before making their choice, participants in the debiasing condition were given product reviews from prior participants which included information about the level of negative hedonic emotions (e.g., deprivation, missing out) experienced from consuming the virtuous product; respondents in the control condition read neutral reviews that lacked any affective information. Results revealed a significant interaction of participants' AFA and intervention condition ( $b = -.49, p = .05$ ). Low AFA participants ( $-1SD$ ) who received the debiasing reviews were more likely to select the dark chocolate than those who received the control reviews ( $b = .86, p = .01$ ). However, for high AFA participants ( $+1SD$ ), there was no significant difference between the debiasing and control reviews conditions ( $p = .79$ ). These results were unchanged when we controlled for participants' trait self-control ( $p = .95$ ).

In sum, the current research suggests that affective forecasting accuracy is an important component of successful self-regulation, such that a better ability to correctly predict one's emotional reactions facilitates restraint in affectively-laden self-control domains. In highlighting this path to restraint, we offer a new hope for individuals who want to avoid indulgence or firms who want to prompt consumers toward restraint – simple interventions that reduce consumers' need to rely on their own, possibly faulty affective forecasting abilities can reduce impulsive decisions and prompt greater long-term well-being.

For more information contact: [hristina.nikolova@bc.edu](mailto:hristina.nikolova@bc.edu)

### ***Is it more rational to say “no”? : How choosing versus rejecting alternatives affects information processing***

Tatiana Sokolova, University of Michigan, USA\*

Aradhna Krishna, University of Michigan, USA

Depending on the context, people express their preferences and make decisions in different ways. Sometimes they need to include alternatives into their consideration sets and opt for the most-preferred ones; and sometimes, they have to reject alternatives that are less attractive – filter them out from their consideration sets and reject the less preferred options. While the two decision strategies (choosing vs. rejecting) should normatively lead to the same outcomes, research in consumer psychology and behavioral economics has shown that oftentimes they produce different decisions (e.g. Laran and Wilcox 2011; Shafir 1993). In this paper we add to the previous line of work on choice versus rejection by showing that these decision strategies can affect consumer evaluations by shifting the decision-making from affective and heuristic-based System-1 processing (in the choice mode), to the deliberative System-2 processing (in the rejection mode).

To develop this prediction we build on research in consumer behavior and cognitive psychology. Rejection is a potential source of “action,” or commission errors: making the wrong rejection decision implies elimination of the best option. In contrast, choice is a source of “inaction,” or omission errors – it makes people face the negative consequences of not selecting the right alternative. Because individuals hold themselves more responsible for the negative consequences of commissions, than for those of omissions (Ritov and Baron 1992), they should be more motivated to reduce their potential regret and to deliberate on their decisions in rejection as opposed to choice.

Further, studies looking at the differences between negation and acceptance, two decisions that mirror rejection and choice, suggest that rejection may be less automatic and more deliberative than choice. “Nay-sayers,” who tend to reply “no” to “yes/no” questions, identify statements as “false” and disagree with Likert-scale items, are more reflective than people who demonstrate an overall agreement tendency (Couch and Keniston 1960). Finally, several studies imply that rejection draws upon cognitive resources and, thus, involves System-2 processing more than does choice (Krishnamurthy and Anish 2008; Laran and Wilcox 2011). For example, Krishnamurthy and Anish found that resource depletion affected decisions in rejection, but not in choice. In sum, prior research indicates that rejection decisions are less automatic, more deliberative, and rely to a greater extent on cognitive resources, all of which imply greater involvement of System-2 processing in rejection tasks.

We tested our prediction across six studies. To demonstrate that rejection mode relies more (less) on the deliberative System-2 (System-1) processing than does choice, in the first two studies we utilized the robust finding that the gains versus losses frames affect choice under System-1 processing, but not under System-2 processing (e.g. De Martino, et al. 2006; Simon, et al. 2004). In Study 1A, we used the Asian disease problem, wherein people had to consider two programs of combatting an unusual disease (Tversky and Kahneman 1981): a riskless program A, and a risky program B. Driven by System-1 processing, people change their preferences across different problem frames: they favor the riskless option in the domain of gains and avoid this option in the domain of losses. Greater involvement of deliberative System-2 processing has been shown to mitigate the effects of problem framing and to produce more consistent preferences across gains and losses frames (e.g. De Martino, et al. 2006). In line with our predictions regarding greater involvement of System-2 processing in rejection, decision-makers expressed more consistent preferences across the gains and the losses frames when they had to indicate “which plan <they would> reject” ( $\Pi_{\text{gains}}=48\%$  vs.  $\Pi_{\text{losses}}=43\%$ ,  $p=.66$ ), than when they had to indicate “which plan <they would> choose” ( $\Pi_{\text{gains}}=76\%$  vs.  $\Pi_{\text{losses}}=42\%$ ,  $p=.001$ ). In Study 1B, we replicated the moderating effect of task type on framing effects: when asked about monetary gains (vs. losses) people exhibited more consistent preferences under rejection instructions ( $\Pi_{\text{gains}}=54\%$  vs.  $\Pi_{\text{losses}}=38\%$ ,  $p=.12$ ), than they did under choice instructions ( $\Pi_{\text{gains}}=96\%$  vs.  $\Pi_{\text{losses}}=29\%$ ,  $p=.001$ ).

Study 2 demonstrated the effect of task type on information processing in the context of online reviews. Participants had to remove hotels from (save them to) their list after looking at their aggregate ratings (i.e. affect-poor central cues) and at two of their randomly selected reviews (i.e. affect-rich peripheral cues). We expected that participants would rely more (less) on aggregate ratings (individual reviews) in System-2 laden rejection, than they would in choice. Indeed, rejection reduced the share of hotels with bad ratings and excellent individual reviews ( $\Pi_{\text{rejection}}=28\%$  vs.  $\Pi_{\text{choice}}=39\%$ ,  $p=.028$ ), and increased the share of hotels with good aggregate ratings but bad individual reviews in users’ consideration sets ( $\Pi_{\text{rejection}}=31\%$  vs.  $\Pi_{\text{choice}}=22\%$ ,  $p=.098$ ). Next, Study 3 showed that under rejection instructions people were less likely to opt for the objectively more expensive but seemingly cheap cell phone plan favored under System-1 processing ( $\Pi_{\text{rejection}}=51\%$  vs.  $\Pi_{\text{choice}}=70\%$ ,  $p=.045$ ).

Study 4 tested the proposition regarding greater involvement of System-2 processing in rejection tasks by looking at the effect of cognitive load on rejection decisions. Consistent with our theorizing, in a rejection task people exhibited a stronger preference for the riskless option in the domain of gains when their cognitive resources were taxed by a secondary task ( $\Pi_{\text{load}}=75\%$  vs.  $\Pi_{\text{control}}=57\%$ ,  $p=.045$ ). Finally, Study 5 examined the effect of System-1 compatible feeling-based processing on rejection versus choice decisions

regarding two monetary gains (riskless vs. risky gain). In the control condition their preference for the riskless option was significantly lower in rejection than in choice ( $\Pi_{\text{rejection}}=52\%$  vs.  $\Pi_{\text{choice}}=95\%$ ,  $p<.000$ ). In contrast, in the feeling-based condition, wherein participants first considered how they “felt about each option,” System 1-driven preference for the riskless option in the rejection task increased significantly ( $p=.02$ ) and the difference between rejection and choice tasks was reduced ( $\Pi_{\text{rejection}}=73\%$  vs.  $\Pi_{\text{choice}}=89\%$ ,  $p=.03$ ).

This research shows that choosing versus rejecting alternatives determines how the information about the attributes will be processed and which informational cues will influence the final decision more. In addition, this research introduces task type as a novel moderator of the framing effects, documented both in behavioral economics and consumer psychology.

For more information contact: [tatiana.sokolova@hec.edu](mailto:tatiana.sokolova@hec.edu)

**SCP ADVISORY PANEL MEETING**

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

**Snowy Egret**

**Break**

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

**Grand Palm Col. West**

**Session 8**

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

***Symposium: (Don't) Fear the Reaper: Mortality Salience as a Driver of Consumer Behavior***

**Chair:** Gergana Nenkov, Boston College, USA

***Thinking about Death Increases Preference for Material Consumption***

Gülen Sarial-Abi, Bocconi University, Italy

Veena Kondaveeti, University of Minnesota, USA\*

Kathleen Vohs, University of Minnesota, USA

Ryan Hamilton, Emory University, USA

Prior research suggests that consumers recognize that experiential purchases leave them happier than material purchases (Van Boven & Gilovich, 2003). We suggest that this preference may be reversed when consumers are reminded of death. We hypothesized that the physical and enduring nature of material products can serve as a better psychological defense against the meaning threats caused by death reminders than do experiences. We base our predictions on the Meaning Management Model (Heine, Proulx, & Vohs, 2006). In three studies, including a field study, we found that when people are cued with death reminders, they are more likely to prefer material goods compared to experiences. We further found that this preference may be an adaptive response: material goods appear to be better at reducing thoughts of death and anxiety about death than are experiences.

Study 1 tested our prediction that death reminders would lead to increased preference for material goods compared to a neutral condition. Participants in the death reminder condition described how they would feel when they think about their own death and what would happen to them when they physically died (Schmeichel et al., 1999). Participants in the neutral condition described how they feel and what would happen when they are in dental pain. Next, as in Hershfield, Tully, and Meyvis (in press), all participants were asked to indicate their choices in 5 sets of gift certificates that they might actually receive, each consisting of a material and an experiential option (e.g., choosing between a Barnes & Noble gift certificate [material] and AMC Movie Theatres gift certificate [experiential]). Consistent with our hypothesis that death reminders would lead to greater preference for material goods, participants in the death reminder condition chose more material goods compared to participants in the neutral condition ( $M = 3.25$ ,  $SD = 1.17$  vs.  $M = 2.93$ ,  $SD = 1.39$ ;  $t(271) = 2.07$ ,  $p < .04$ ). Study 1 offered initial support for the hypothesis that cues about death lead people to prefer material goods.

We conducted study 2 to examine whether this preference for material goods over experiences on reminders of death held for purchases that are already made. To account for purchases that fall between the two anchors of material and experiential, we introduced an additional category of material-experiential purchases. Given that material-experiential purchases have greater similarity to experiential purchases than material purchases (Guevarra & Howell, 2014), we expected that our hypothesis would hold true when material-experiential purchases are categorized as experiential purchases and not as material purchases.

Participants were invoked into the mortality salience and control conditions as in study 1. All participants were then asked to write about a recent purchase that could be a material good (e.g., jewelry, clothing), a material good that provides an experience (e.g., book, guitar), or a life experience (e.g., eating out, going to a concert, traveling) (Guevarra & Howell, 2014). All participants then rated the extent to which they cherished, treasured, savoured, appreciated, and were happy, satisfied, and willing to repeat the purchase they described ( $\alpha = .88$ ). Purchase type (material, material-experiential, or experiential) ratings by two RAs were highly correlated,  $r(97) = .88$ ,  $p < .01$ .

In line with our hypothesis, participants had greater positive attitudes towards material purchases they described when they had been reminded about death than when they were not ( $M_{\text{mat-mort}} = 76.65$ ,  $SD_{\text{mat-mort}} = 14.70$  vs  $M_{\text{mat-ctrl}} = 54.14$ ,  $SD_{\text{mat-ctrl}} = 17.21$ ;  $F(1,26) = 13.9$ ,  $p = 0.0009$ ). No such differences with respect to death reminders were observed among participants who wrote about material-experiential and experiential purchases. Our hypothesis gained support when material-experiential purchases were categorized as experiential purchases ( $F(1,93) = 7.1$ ,  $p = 0.009$ ) and not as material purchases.

The results of study 2 show that death reminders lead to greater positive attitudes towards material purchases already made, adding to study 1 where a greater desire for purchasing material goods over experiences was seen.

In study 3, we examined whether this preference for material goods over experiences can successfully buffer people against meaning threats caused by death reminders. Study 3 was a field study examining a special population – visitors to one of the biggest cemeteries in a major European city – for whom mortality might be expected to be salient. We used self-reports of participants' death related thoughts as a proxy measure for thoughts about death. Our prediction was that when participants receive a material good, they would score lower on death related thoughts compared to those people who receive an experience. We also measured death-related anxiety using the Death Anxiety Scale (Conte, Weiner, & Plutchik, 1982).

Two researchers approached people visiting the cemetery on a Saturday morning. Participants in the material condition received a free coffee mug while participants in the experience condition received a free cup of coffee from a thermos before answering the questions in the study. Participants then completed twelve questions that measured their death-related thoughts at the time of the study. Items were averaged to form a death thoughts scale ( $\alpha = .71$ ). Next, participants completed the Death Anxiety Scale (Conte, Weiner, & Plutchik, 1982).

Consistent with our hypothesis that material goods, more so than experiences, better buffer people against meaning threats caused by death reminders, participants in the material condition reported fewer thoughts about death compared to participants in the experience condition ( $M = 2.57, SD = .40$  vs.  $M = 2.85, SD = .45$ ;  $t(58) = 2.51, p < .02$ ). Those in the material condition reported only marginally lower scores on death-related anxiety compared to those in the experience condition ( $M = 13.36, SD = 5.72$  vs.  $M = 15.88, SD = 5.74$ ;  $t(63) = 1.77, p = .08$ ).

Study 3 offered support for our reasoning that if, as in studies 1 and 2, people prefer material goods over experiences when they are reminded of mortality, then those who receive a material good rather an experience should report fewer death-related thoughts and less death-related anxiety. This suggests that the relative preference for material goods over experiences when death is salient may be an adaptive strategy.

For more information contact: [konda016@umn.edu](mailto:konda016@umn.edu)

### ***Solving the Annuity Puzzle: The Role of Mortality Salience in Retirement Savings Decumulation Decisions***

Linda Salisbury, Boston College, USA

Gergana Nenkov, Boston College, USA\*

Consumers reaching retirement age face the difficult task of deciding how and when to spend the money they have saved for retirement. For five decades, economists have examined this savings decumulation problem and have argued that purchasing annuity products is an optimal decision strategy for most people when they reach retirement (Bernartzi et al., 2011; Yaari, 1965). Economic theory argues that annuities mitigate the risk of outliving one's income, but very few individuals choose to annuitize their retirement savings, a phenomenon economists refer to as the annuity puzzle. In March 2014, U.S. retirement assets totaled \$23 trillion, with only 8.7% of assets held as annuity reserves (Investment Company Institute).

The economic literature has examined the annuity puzzle within a rational choice framework. Several explanations for the annuity puzzle have been examined – such as low retirement savings (Dushi & Webb, 2004), unfair annuity pricing (Mitchell et al., 2000), annuitization framing (Agnew et al., 2008; Brown et al., 2008), and desire to bequeath one's assets (Lockwood, 2012) – yet none have been shown to fully account for it. Further, companies have adjusted their annuity products to accommodate proposed explanations and make annuities more attractive by introducing options such as fixed terms, bequeath features, and deferred start dates, with little effect on annuitization rates. As a result, some researchers have called for more work that moves beyond the fully rational paradigm and instead offers behavioral explanations for the annuity puzzle (Brown, 2007). This research offers one such novel explanation of the psychological underpinnings of the annuity puzzle, adding to explanations proposed in prior literature. We propose that the task of choosing whether or not to buy an annuity is anxiety-provoking and aversive for consumers because it evokes thoughts of death. A key aspect of the annuity decision process is considering when one is likely to die (Brown, 2007). We argue that, by forcing people to think about dying, the annuity decision makes people's mortality salient, motivating them to defend against this threat by avoiding the annuity option to remove death-related thoughts from consciousness.

Mortality salience (MS), defined as the increased accessibility of thoughts related to one's death, has been examined extensively by terror management theory researchers, who have shown that people defend against conscious death-related thoughts by using proximal cognitive strategies that remove these thoughts from consciousness and/or push the problem of death into the distant future (Pyszczynski et al., 1999). Drawing upon this literature, we argue that consumers avoid annuity products as a proximal defense strategy against



experiencing thoughts of death evoked by the annuity choice task. To test this proposition, we conduct four experiments and a meta-analysis of our studies to estimate an overall average effect size.

In Experiment 1, we asked 161 participants to imagine they are age 65 and deciding whether to put their retirement savings into an annuity product (annuity condition) or into an IRA product (IRA condition). Spontaneous thought listing during each task revealed that the annuity decision evoked significantly more thoughts about death and dying than did the IRA decision ( $z = 5.57, p < .001$ ), and purchase likelihood was far lower for the annuity (38.6%) than for the IRA product (63.4%;  $z = 5.50, p < .001$ ).

In Experiment 2, we presented a hypothetical retirement scenario to 156 participants from an online panel and asked to consider whether or not to put their retirement savings into an annuity at age 65. Participants were randomly assigned to a high mortality salience (MS) or a low MS condition. We manipulated mortality salience using a well-established priming technique that asks participants to write about their own death (Burke et al. 2010; Greenberg et al. 2003; Greenberg et al. 1997). Participants in the control condition wrote essays about dental pain instead. As expected, participants were less likely to choose the annuity option when mortality salience was primed ( $M_{highMS} = 22.67\%$ ) versus when it was not ( $M_{lowMS} = 40.74\%$ ;  $\chi^2(1,156) = 5.84, p < .02$ ).

In Experiment 3 ( $n = 358$ ), we tested a more subtle and practical MS manipulation by altering the annuity product description to make mortality more or less salient. Increasing MS via the annuity description decreased the proportion of people choosing the annuity option ( $M_{high} = 25.82\%$ ,  $M_{low} = 35.80\%$ ,  $z = -2.04, p < .05$ ), as did increasing MS using the priming technique ( $M_{MS\ prime} = 26.22\%$ ,  $M_{Dental\ prime} = 34.54\%$ ,  $z = -1.70, p < .09$ ).

In Experiment 4 we replicate our findings in a realistic, in-person setting using stimuli that reflect what consumers are likely to encounter in the marketplace and an older sample of consumers nearer to retirement age ( $M_{age} = 48.2$ ; 79% between 40-65 years), who are actually facing the savings decumulation decisions we study. Participants were shown an annuity informational brochure modeled after actual annuity promotional materials distributed by a major annuity provider and were given the same hypothetical scenario involving annuities as in prior studies. Increasing MS by including explicit references to one's own death in the annuity description decreased the proportion of people choosing to put retirement savings into an annuity ( $M_{highMS} = 26.32$ ,  $M_{lowMS} = 50.00$ ,  $z = -2.07, p < .04$ ), replicating prior findings.

Finally, we conducted a meta-analysis to integrate findings across Experiments 2-4 and estimated that the overall mean effect of increasing mortality salience was an 11.5% point decline in annuity choice rate (see figure in appendix for meta-analysis results).

This research contributes to understanding the annuity puzzle by moving beyond prevalent economic explanations and instead offering a novel psychological explanation. It also adds to terror management theory (Greenberg et al., 1997), which has linked mortality salience to a broad range of behaviors (e.g., Arndt et al., 2004; Cai & Wyer, 2014; Maheswaran & Agrawal, 2004; Shehryar & Hunt, 2005), but has not examined its effects on financial decisions like retirement savings. Finally, it contributes to retirement planning research and practice by providing insight into retirement savings decumulation – an increasingly important topic as 401(k) plans replace traditional defined benefit pensions and the size of the elderly population grows.

For more information contact: [gergana.nenkov@bc.edu](mailto:gergana.nenkov@bc.edu)

## *Understanding the Quantified Self: Effects of Self-Tracking on Mortality Salience and Health Motivation*

Martin Mende, Florida State University, USA

Maura Scott, Florida State University\*

Gergana Nenkov, Boston College, USA

Propelled by an explosion of digital technologies, millions of consumers monitor the intricacies of their lives, using wearable devices, smart phones, and corresponding apps to track themselves, a trend often referred to as the “quantified self” movement. Despite the fast-evolving impact that self-tracking has on consumer lives no marketing research has examined the consumer experience of self-tracking and its psychological facets in detail. This research identifies a potentially unforeseen consequence of self-quantification – increased mortality salience, or accessibility of thoughts related to one’s death (Greenberg, Solomon, & Pyszczynski, 1997), which could have important implications for consumers’ information processing and behavior. A significant amount of research has examined the consequences of increased mortality salience (Burke, Martens, & Faucher, 2010; Greenberg et al., 1997), but less research has dealt with identifying factors that might increase mortality salience in consumers’ daily lives. In this research we examine self-quantification as one such important factor. We propose that exposure to a self-tracking device has the unintended effect of increasing the salience of death-related concerns, which we show has a positive effect on consumers’ health motivations, a boost that serves as a defense against the mortality salience threat. Moreover, we explore how a common marketing practice of encouraging consumers to anthropomorphize (i.e., imbue humanlike characteristics onto a non-human entity; Epley, Waytz, & Cacioppo, 2007) their self-tracking devices (e.g., Adidas calls its device “My Coach”) might interplay with the mortality salience effect we propose. We suggest that anthropomorphization might offer another mortality salience defense, making the health motivation boost we predict unnecessary, resulting in an undesirable backfire effect.

Exposure to a self-monitoring device should increase consumers’ awareness of the possibility of their own vulnerability and ultimate death, which will activate proximal defenses to enable one to push the problem of death into the distant future (Greenberg et al., 2000). A common proximal defense used to remove death-related thoughts from focal attention is denying one’s vulnerability to disease or premature death (Greenberg et al., 2000; Pyszczynski et al., 1999). We suggest that people would defend against the threatening awareness of their own mortality triggered by exposure to a monitoring device by increasing their motivation to lead a healthy (and hence long) life; that is, exposure to self-tracking devices should boost consumer health goal motivation.

To test this proposition, in Study 1 participants (110 online panelists; Mage = 34.13; 44 females) were randomly assigned to one of two experimental conditions that asked them to view and evaluate either a self-tracking band or a watch (a non-tracking device of identical design). After evaluating the monitoring band/watch to support the cover story, we measured mortality salience (4-item measure, e.g., “To what extent have you been thinking about death in the past several minutes?”; Van den Bos & Miedema, 2000) and health motivation (2 items; “In the past several minutes, to what extent have you been thinking about: the importance of living a healthy life; making changes in your lifestyle to increase the likelihood that you will live longer”). As predicted, results revealed a significant main effect of self-monitoring on mortality salience ( $M_{\text{Band}} = 2.51$  vs.  $M_{\text{Watch}} = 2.02$ ;  $F(1, 108) = 3.89$ ,  $p = .05$ ) and on the health motivation ( $M_{\text{Band}} = 3.74$  vs.  $M_{\text{Watch}} = 2.88$ ;  $F(1, 108) = 7.75$ ,  $p < .01$ ). We conducted mediation analysis (Preacher and Hayes 2008), which revealed a significant indirect effect of the self-monitoring on health motivation via mortality salience (95% CI, [0.0134, 0.7558]).

We next examine whether the association between self-tracking and health goal motivation might be influenced by the extent to which consumers anthropomorphize the tracking device. We propose that anthropomorphizing a self-tracking device can mitigate its effects related to mortality salience, as anthropomorphization “comforts people by providing relationships or companionship” (Wan and Aggarwal 2015, p. 122) and may be utilized to increase the predictability and comprehension of what would otherwise be an uncertain world, aiding one in constructing a meaningful and controllable worldview (Epley, Waytz, & Cacioppo, 2007). Since construing oneself

as a valuable participant in a meaningful universe is a well-established distal mortality salience defense (Greenberg et al., 1997), we propose that anthropomorphization could provide an effective buffer against death anxiety. If anthropomorphism indeed serves as a mortality salience defense, then people might not need to defend against mortality salience by boosting their health motivations.

To test this proposition, in Study 2 participants (335 online panelists;  $M_{age} = 36.27$ ; 45% females) were randomly assigned to one of four experimental conditions in a 2 (self-tracking: yes, no)  $\times$  2 (anthropomorphism: yes, no) design that asked them to evaluate either a tracking band or a watch. Procedure was identical to that in Study 1, except that participants in the anthropomorphism conditions were asked to personalize their monitoring band/watch by giving it a name and gender and using one word to describe its personality. We measured mortality salience as in Study 1 and measured health motivation by giving participants a list of twelve everyday health-promoting behaviors in randomized order, and asking them to indicate how motivated they are to regularly engage in these behaviors in the future (e.g., eat a well-balanced diet; get enough rest and sleep;  $\alpha = .86$ ; Moorman & Matulich, 1993).

We found a significant main effect of self-monitoring on mortality salience ( $M_{Band} = 2.73$  vs.  $M_{Watch} = 2.33$ ;  $F(1, 333) = 6.30$ ,  $p < .05$ ), but no effect of anthropomorphization and no interaction between the two, showing that self-tracking increases mortality salience whether one anthropomorphizes their tracking device or not. We then examined the health behaviors motivation index, and results revealed a significant interaction between self-tracking and anthropomorphism ( $F(1, 333) = 6.33$ ,  $p < .05$ ). In the no anthropomorphism condition participants reported significantly higher health motivation in the self-monitoring condition ( $M_{Watch} = 5.06$  vs.  $M_{Band} = 5.42$ ,  $F(1, 165) = 2.30$ ,  $p < .05$ ), replicating prior findings. In the anthropomorphism condition, however, these effects disappeared ( $M_{Watch} = 5.10$  vs.  $M_{Band} = 4.90$ ,  $F(1, 166) = 1.26$ ,  $p < .30$ ). These results support our contention that exposure to a self-tracking device (vs. a watch) increases people's health motivation as a defense against the threatening awareness of their own mortality. When participants have the chance to anthropomorphize their self-tracking device, however, these health motivation effects disappear, suggesting that anthropomorphism might be acting as a mortality salience defense, eliminating the need to deny one's vulnerability to dying by boosting one's health motivation.

Our studies offer novel theoretical insights, since prior research has not examined the effects of everyday consumer experiences (self-tracking) on mortality salience, nor has established anthropomorphization as a possible mortality salience defense. There is no evidence yet as to whether self-tracking devices might help consumers with the accomplishment of their health goals, although companies frequently claim that they do. This research provides some much needed insight into the possible effects of self-tracking devices on consumers' lives.

For more information contact: [mlscott@fsu.edu](mailto:mlscott@fsu.edu)

### ***Improving Evacuation Compliance Through Personal Control***

A. Selin Atalay, Frankfurt School of Finance and Management, Germany\*

Margaret Meloy, Pennsylvania State University, USA

Following natural disasters, emergency management agencies often ask, "Why do people who are facing life-threatening circumstances stay in harm's way, and what can be done to increase compliance with evacuation mandates?" Focusing on the need for control that arises with mortality salience (MS) when a life-threatening emergency is imminent, we explain why individuals fail to comply with these evacuation mandates. We propose that the need for control instantiated under MS (Arndt & Solomon, 2003; Fritsche & Fankhanel, 2008) reduces the attractiveness of complying with these evacuation mandates. We test whether providing control during the evacuation

process allows individuals to meet the need for control, leading to increased compliance. Two pretests and two studies were conducted to test these ideas.

**Pretest 1.** What are individuals' attitudes towards evacuating in the absence of a life threatening situation? Our intuition was, in the absence of a life threatening situation, people would be likely to report that they would evacuate during an emergency directive. Eighty-four undergraduates participated in a two-cell between-subjects design, half of the participants read a scenario about a couple facing a hurricane (H) with mandatory evacuation to a shelter, and the other half read a non-life-threatening bad weather scenario (BW). As expected, those in the hurricane condition indicated (on a 1-to-7 scale) higher likelihoods of evacuating compared to those in the BW condition ( $M_H = 6.07$ ,  $SE_H = .29$ ;  $M_{BW} = 3.34$ ,  $SE_{BW} = .29$ ;  $F(1, 82) = 44.79$ ,  $p < .0001$ ). Individuals' lay intuition is that they would comply with an evacuation mandate and move to an assigned shelter. In real life-threatening natural disasters, responses to the disaster threat may be less rational. Thus, to mimic the existential anxiety induced during an actual evacuation situation, we manipulated MS in the experiments that follow.

**Study 1.** Study 1 was conducted to test whether evacuating to an assigned shelter during an evacuation directive would be less appealing for those experiencing MS relative to those not experiencing MS. Sixty-nine mTurk participants participated in a MS/non-MS between-subjects design. The standard MS induction was used (Greenberg et al., 1990) (e.g., think about death and dying). Participants responded to the same hurricane scenario as pretest 1 and predicted the couple's likelihood of evacuating on a 1-to-7 scale. The likelihood of evacuating during the mandatory evacuation was significantly lower under MS ( $M_{MS} = 2.66$ ,  $SE = .32$ ) than non-MS ( $M_{NonMS} = 3.81$ ,  $SE = .38$ ,  $F(1, 53) = 5.12$ ,  $p < .05$ ).

When individuals were faced with a life-threatening natural disaster under heightened MS, the thought of complying with the evacuation directive was unappealing. Is the need for control responsible for this reduced compliance (Arndt & Solomon, 2003, Fritsche & Fankhanel, 2008)? If so, does providing control in the process of evacuating increase compliance? To establish that non-compliance is a strategy that leads individuals to feel more "in control," we conducted a second pretest.

**Pretest 2.** Pretest 2 examines whether refusing to evacuate during a natural disaster leads to increased feelings of control. Ninety undergraduates participated in a two-cell between-subjects design. Participants read the same hurricane scenario as study 1. After reading the scenario, half of the participants imagined that the couple had evacuated to the assigned shelter. The other half imagined that the couple was non-compliant. Participants rated how they thought the couple would feel after their evacuation decision (i.e., powerful, autonomous, in control) on a 1-to-7 scale. Participants who imagined the couple *not* evacuating thought they would feel *greater control* ( $M_{Evac} = 2.76$ ,  $SE_{Evac} = .18$ ;  $M_{NoEvac} = 3.73$ ,  $SE_{NoEvac} = .18$ ;  $F(1, 87) = 15.96$ ,  $p < .0001$ ).

This finding suggests that when individuals who are experiencing MS are ordered to evacuate to an assigned shelter, refusing to evacuate and staying at home provides a greater sense of control than evacuating. We ask, if lack of control motivates non-compliance, will giving individuals control over some element of the evacuation process increase compliance? Choice, in general, enhances individuals' sense of personal control (Inesi, Botti, Dubois, Rucker, & Galinsky, 2011). This was tested in study 2.

**Study 2.** One Hundred twenty undergraduates participated in a 2 (MS: MS/non-MS) x 2 (Control over Shelter (COS): Yes/No) between-subjects design study. It was conducted using the same scenario and the same MS induction as study 1. Level of control was manipulated. Specifically, after the MS induction, participants in the *COS-Yes* scenario were told that the couple had control via choice of shelter – they could choose to evacuate to one of three shelter locations. As predicted, under MS, those in the *choice of shelter* condition were the most likely to evacuate; the interaction was significant ( $F(1, 116) = 3.81$ ,  $p = 0.05$ ;  $M_{MS-COSYes} = 5.19$ ,  $SE_{MS-COSYes} = .30$ ;  $M_{MS-COSNo} = 4.37$ ,  $SE_{MS-COSNo} = .30$ ;  $M_{nonMS-COSYes} = 4.69$ ,  $SE_{nonMS-COSYes} = .27$ ;  $M_{nonMS-COSNo} = 5.00$ ,  $SE_{nonMS-COSNo} = .28$ ). Neither the main effect of MS nor the main effect of COS was significant ( $p > .82$  and  $p > .39$  respectively). Having control over some aspect of the

evacuation process (via choice of shelter) increased the likelihood of compliance with the evacuation directive when individuals were experiencing the existential anxiety associated with MS.

**Discussion.** We show that under MS, evacuating to an assigned shelter during a life-threatening emergency is unappealing. MS heightens the need for control, and evacuation to an assigned shelter further reduces perceived control, therefore compliance is low. If, however, individuals are provided with control through choice of shelter location, individuals are more likely to comply with an evacuation mandate. In this case, the evacuation order does not further reduce perceptions of control, but contributes to meeting the need for control.

The current findings are relevant to other kinds of directives (e.g., “shelter in place” due to external threats) both when environmental disasters strike and for other compliance requests that heighten MS are made (e.g., to donate blood, get vaccinated, follow medical orders). Allowing individuals control may also increase compliance with directives from medical professionals.

For more information contact: s.atalay@fs.de

## ***Symposium: Marketing Actions that Change Behavior***

**Chair:** Kristen Duke and Alicea Lieberman, University of California San Diego, USA

### ***Norm Inferences: The Hidden Influence of Pricing Structure***

Kristen Duke, University of California San Diego, USA\*

Alicea Lieberman, University of California San Diego, USA

On Amir, University of California San Diego, USA

Consumers are exposed to countless purchasing incentives framed as either discounts or surcharges. Discounts are offered in many forms, from tax refunds (e.g., for purchasing high-efficiency vehicles) to lowered bill costs (e.g., for reducing energy usage). Surcharges are imposed on behaviors ranging from paying with credit rather than cash, to failing to bring a reusable bag while shopping. How do these differing structures influence motivation to comply? Generally, surcharges are found to be more powerful motivators than are discounts. This contention is supported by loss aversion, where a surcharge (a loss) is more painful than a commensurate discount (a gain). Further, surcharges are experienced monetary costs, while missed discounts are mere opportunity costs, which people often underweight. In this paper we advance the argument that a third factor, shifting norm perceptions, may also play a role in this discrepancy. Specifically, we propose pricing policies may “leak” information about normative expectations, and as such, consumers infer higher behavioral conformity under surcharge policies than under discount policies. We support this hypothesis in a series of studies.

In an initial study, we demonstrate that a surcharge policy leads to higher behavioral prevalence estimates than a discount policy. Participants (N=321) were asked to imagine visiting a local coffee shop that encourages reusable mug use. Half of participants read about a 10 cent discount for bringing a mug, and the other half read about a 10 cent surcharge for not doing so. Participants in the surcharge condition expected significantly higher reusable mug use than those in the discount condition ( $M_{\text{scharge}} = 29.40\%$ ,  $M_{\text{discount}} = 23.53\%$ ,  $t(310) = 2.68$ ,  $p < .01$ ). The difference holds when controlling for perceptions of how motivating the policy is perceived to be. These findings are also consistent with pure loss aversion; therefore, in the following studies we rule out this alternative account.

If a behavior is believed to be normative, failing to comply will often lead to feelings of embarrassment. If surcharges lead to higher inferred behavioral conformity, then failure to conform should foster greater embarrassment under a surcharge policy than a discount policy. To test this hypothesis, participants (N=206) were randomly assigned to one of two groups, in which they imagined working for a company that either offered a \$10 health insurance discount for exercising a recommended amount, or imposed a \$10 surcharge for failing to meet the recommendation. As predicted, participants in the surcharge condition indicated that they would be more embarrassed if they did not reach the exercise recommendation compared to those in the discount condition (M = 4.61 versus M = 3.44;  $t(204) = 3.56$   $p < .01$ ), suggesting stronger perceived norms under surcharges.

In studies 1 and 2 we provide tangential support for our hypothesis. In study 3, we seek to directly implicate perceived norms in these effects by testing whether they mediate the impact of policy structure on conforming to the policy. We also add support that loss aversion alone does not drive this effect by choosing a discount twice the value of a surcharge, and surcharges still remain dominant. Participants (N = 805) were asked to imagine participating in a 5k Turkey Trot Run that encourages optionally dressing-up as a turkey for the race. Half of the participants read that there was a \$4 discount for runners who dress up for the race, and the other half read about a \$2 additional cost for those who choose not to dress up. Participants then answered 3 items adapted from previous research measuring purchase intention (Moon et al., 2008, Sweeney et. al, 1999, Dodds et al., 1991). The 3 items formed a scale measuring intentions of dressing as a turkey for the race ( $\alpha = .9$ ). Participants then indicated on 7-point scales (1: not at all to 7: very much) how much they thought it was an expectation to dress up for the race, how embarrassing it would be not to dress up for the race, and how guilty they would feel if they did not dress up. Subsequently, they indicated whether they thought the norm for other participants was to dress as a turkey or not to dress as a turkey, and whether they agreed with one race organizer who expected the majority of runners to dress up, or her partner who expected few. Finally, all participants answered a 6-item index that included items such as “I care what other people think about me,” and “I do my best to fit in.” These items were combined and averaged ( $\alpha = .8$ ) and used to control for individual differences in conformity. We find that condition (surcharge vs. discount) marginally predicts behavioral intention ( $b = .24$ ,  $t(803) = 42.1$ ,  $p < .06$ ), and becomes significant when controlling for gender and normative tendencies ( $b = .28$ ,  $t(801) = 2.11$ ,  $p < .03$ ). Under a surcharge, participants were significantly more likely to report increased expectation of behavioral compliance ( $b = .80$ ,  $t(803) = 7.86$ ,  $p < .001$ ) and stronger levels of embarrassment ( $b = .28$ ,  $t(803) = 2.55$ ,  $p < .01$ ) and guilt ( $b = .4$ ,  $t(803) = 3.30$ ,  $p < .001$ ), for not dressing up for the race. When reading about a surcharge as compared to a discount, participants were significantly more likely to report that ‘the norm’ was to dress up like a turkey for the race ( $b = .14$ ,  $t(803) = 4.13$ ,  $p < .001$ ). Importantly for our theorizing, these normative expectations and normative emotions fully mediate the effect of policy structure on behavioral intention.

Across several domains, the form of an imposed incentive (surcharge or discount) is shown to influence perceived behavioral prevalence and consequently normative expectations and behavior. Our work promotes norm inferences as a critical driver of incentive responses worth further exploration.

For more information contact: [Kristen.duke@rady.ucsd.edu](mailto:Kristen.duke@rady.ucsd.edu)

### ***Reducing Credit Card Delinquency via Automated Phone Messaging***

Nina Mazar, University of Toronto, Canada\*

Dan Ariely, Duke University, USA

Credit card delinquency is costly to individual and economic wellbeing. The Federal Reserve Bank estimated the delinquency rate on all U.S. consumer credit card loans in Q1 of 2012 to be 3.07%. A 2012 national survey paints a substantially worse picture among low and moderate-income households: 28% of households carrying a balance reported accruing late fees due to delinquency.

In most cases, when an account holder has missed her minimum due-payment for two consecutive months, the first major negative consequence happens: delinquency is reported to the chief credit bureaus. This hurts the account holder's credit score and makes it not only harder to access further credit but also increases the cost of subsequent borrowing. In addition, since a consumer's credit report can be requested by third parties, lower credit scores can create other, sometimes less obvious challenges, such as making it harder to get a job, disqualifying oneself from getting insurance coverage, and decreasing the probability of getting a mortgage. After minimum due-payments have been missed for four consecutive months, an account is likely to be charged-off and sent to a collection agency with the possibility of legal actions—making the cost of delinquency substantially higher for both the borrower and the lender.

In an effort to avoid such damaging and expensive actions, as a first means of communication, typically immediately after a card holder has missed one monthly minimum payment and therefore becomes delinquent, credit card companies' customer service departments make use of outbound interactive voice response (IVR) calls to simply alert borrowers to their total due amount. If this first means of contact fails and after a customer is delinquent for two or more consecutive months, credit card companies move to other means of communication: live-agent calls and letters. Thus, to the extent that IVRs are effective, they can be an economical way to intervene early on in the delinquency process and potentially eliminate some of its negative (downstream) consequences.

The current design of IVR calls is based on the assumption that account holders know and understand the meaning of having a total due amount (debt literacy) but simply forgot to pay. Therefore, if anything, they only need to be reminded of their total due amount. While this reminder-approach has merit, it ignores several potential barriers to payment. First, some individuals receive a fair amount of outbound marketing calls and thus, in reactance to this either may abandon the call as soon as they pick up and hear an automated IVR message, or they may indicate that they are not the right part. Both of these reactions would result in an individual not advancing to the main part of the IVR message.

Another possibility is that individuals listening to the main part of the IVR message might not fully understand the meaning of having a total due amount. For example, only about one-third of Americans are estimated to fully comprehend the workings of credit cards (Lusardi and Tufano 2009). It also ignores the possibility that while people might theoretically know what the meaning and consequences of delinquency are, they might play ignorant and try to avoid thinking about the uncomfortable truth and consequences of their own specific delinquency (attention-disengagement strategies).

In addition, there are other possible barriers that could prevent delinquent customers from repaying their debt. For one, it is possible that while repaying their debt is generally desirable, that this intention is not sufficient to create a repayment action. In this regard, it has been shown that helping people to make plans (i.e. forming implementation-intentions; Gollwitzer 1999) and making them commit to their intentions can increase their likelihood of following through on these plans (Shu et al. 2012).

In light of these potential barriers to action, we

1. Increased the urgency of the IVR message to break through the marketing clutter (*urgency intervention*);
2. Provided delinquent customers with an explanation of their situation and the actions needed to resolve it (*debt-literacy intervention*);
3. Helped to create implementation-intentions for debt repayment (*implementation-intentions intervention*)
4. Prompted an active commitment to customers' response that they will pay within the next few days (*active-commitment intervention*).

The results from our large-scale (> ½ million IVR calls) randomized control trial (RCT) suggest that small and fairly cheap IVR changes can significantly alter behavior in a context that is typically assumed to not offer much room for nudging interventions. Specifically, creating a sense of urgency coupled with a focus on debt literacy and the formation of implementation intentions (interventions 1-3) reduced delinquency by 3.3% and increased the average speed by which delinquent account holders set their accounts in order by almost a full day. Our active-commitment intervention did not prove significant. This was either due to commitment not being a barrier to action in our context or due to the fact that that intervention came relatively late in the IVR message (the longer the IVR message the more likely were customers to not listen to the entire message).

For our effective sample size these results translate at minimum into the immediate additional collection of more than \$1,161,000 in total dues and a reduction in further collection efforts and costs due to more than 8,000 fewer delinquencies and faster payoffs. If the additional fewer delinquencies resulted in the collection of the entire balance (and otherwise in \$0 payments), our interventions would contribute an additional \$22,795,000.

While it is possible that the achieved improvement in repayment in this experiment was done at the expense of other debts, our results suggest that delinquency is not necessarily only an outcome of either forgetting or sheer inability to make a payment. Instead, delinquency might also be due to a lack of fully understanding or attending to its meaning as well as non-specific plans to follow through on one's payment intentions. More generally, the RCT reported in this paper demonstrates the importance of understanding the barriers to behavior and the power of relevant psychological interventions for increasing economic and individual wellbeing in a relatively costless manner.

For more information contact: [nina.mazar@rotman.utoronto.ca](mailto:nina.mazar@rotman.utoronto.ca)

### ***When Product Referrals Backfire: The Unintended Consequences of Asking Consumers to Refer Your Product***

Lauren Cheatham, Stanford University, USA\*

Zakary Tormala, Stanford University, USA

Why do consumers advocate on behalf of a service or product? How successful is their advocacy? If a company convinces its customers to become brand advocates, what are the circumstances in which that advocacy becomes more or less successful? In a world in which customer reviews and referrals play larger and larger roles in the marketing process, it is becoming increasingly important to investigate the factors that prompt consumer-generated advocacy and that dictate the persuasiveness of that advocacy. This research aims to examine whether one of the most common ways of motivating consumers to advocate—requesting referrals—leads to effective or ineffective advocacy.

Advocacy can be defined as an expression of support for (or opposition to) something—for example, a product or service, a social policy, or even a candidate for office (Cheatham & Tormala, forthcoming). In the domain of consumer behavior, advocacy often manifests as a customer's recommendation or referral. The common assumption is that by getting customers to advocate on behalf of a brand, product, or service, those customers will persuade other consumers to purchase or try it themselves. And there may even be some hope that people will be persuaded by their own advocacy messages—that is, that by making a recommendation or referral consumers' will boost their own loyalty to the company in question. Indeed, we know that people often are persuaded by their own advocacy or argumentation, even when it originally is directed toward someone else (Anderson, Lepper, & Ross, 1980; Briñol, McCaslin, & Petty, 2012; Janis & King, 1954; Tetlock, Skitka, & Boettger, 1989).



However, we believe that not all self-generated advocacies are equal. In fact, we propose that the very act of soliciting advocacy (i.e., asking consumers to recommend and refer others to a product or service) might produce ineffective advocacy and even backfire by diminishing advocates' support for the advocated entity. Consistent with this notion, the literature on over-justification suggests that preference for an activity can be diminished if that activity is rewarded (Lepper, Green, & Nisbett, 1973). The logic is that if the underlying motivation for a particular behavior shifts from being intrinsic to extrinsic, as can happen when people are rewarded for a behavior they would spontaneously engage in based on their own preferences, people's attributions for their own behavior can shift as well—from internal to external (Bem, 1965, 1972; Lepper et al., 1973). In the advocacy context, it could be that when people write recommendations or referrals because a company requests it, those recommendations and referrals become associated with extrinsic motivation, which has the ironic effect of diminishing the quality of the advocacy messages and even dampening consumers' favorable reactions to the advocated items.

In short, based on past research on self-perception and the over-justification effect, we predict that including an explicit request for referrals in customer communication will lead to less persuasive advocacies compared to those that consumers generate spontaneously. Moreover, we posit that requesting referrals will reduce the favorability of participant's own attitudes toward the advocated brand, product, or service.

Study 1 provided an initial test of requested versus unrequested referrals. Participants were introduced to an online service for local and organic groceries. They spent several minutes exploring the company's website and were then told to imagine having had a positive experience with the online grocer. Following this, they were randomly assigned to either receive a thank-you email ("Thank you so much for ordering from Good Eggs. We hope that your first experience was a positive one! We look forward to delivering more great food to you soon!") or the same thank-you email that also included a referral request ("Would you please share your experience with some of your friends?"). Following this open-ended advocacy request, participants completed questions assessing their attitudes, how likely they were to tell others about the service, and how likely they would be to use the service themselves. As hypothesized, participants offered less favorable responses on each of these measures in the requested rather than unrequested referral conditions.

Studies 2a and 2b used a yoked design in which participants' actual referral messages were assessed for effort and persuasiveness. First, in study 2a, we used the same basic set up as study 1 (with an email message from the company requesting referrals or not) and found that participants differed in how much they wrote about the online service when we later asked them what they would write to someone else in an email. In particular, participants in the requested referral condition wrote significantly *less* than did participants in the unrequested referral condition ( $M_{\text{Request}}=36.73$ ;  $M_{\text{No request}}=43.49$ ). Thus, the company's explicit referral request appeared to decrease the effort participants put into advocating on behalf of a company.

In study 2b, participants were introduced to the same online service for local and organic groceries as those in study 2a and were then asked to judge the comments written by participants from study 2a, such that each new participant in study 2b read one of the participant's comments from study 2a. Participants were then asked to rate those comments on a number of dimensions including authenticity, persuasiveness, effort, trustworthiness, enthusiasm, and knowledge. We found that the differential advocacy messages written by participants in study 2a shaped participants' perceptions in study 2b: Compared to unrequested referral messages, requested referral messages in study 2a were shorter, leading participants in study 2b to perceive less effort, enthusiasm, and knowledge on behalf of the original referrer, and to find the message itself to be less convincing and persuasive.

In sum, two studies provide evidence for the proposed backfire effect: Explicit referral requests diminish the persuasiveness of consumers' advocacy—both for the self and for others. Requested referrals thus appear to backfire relative to more spontaneous, unrequested referrals. Implications for understanding and eliciting persuasive advocacy in consumer contexts will be discussed, with

particular attention to the importance of attribution management—that is, maintaining and building intrinsic motivation for generating advocacy messages so that consumers attribute their advocacy messages to their own attitudes rather than to a company’s requests.

For more information contact: Cheatham@stanford.edu

### ***Only One Left – I’ll Fight you for It!: Scarcity Promotion Advertising and Aggressive Behavior***

Kirk Kristofferson, Arizona State University, USA\*

Brent McFerran, Simon Fraser University, Canada

Andrea Morales, Arizona State University, USA

Darren W. Dahl, University of British Columbia, Canada

Each year, violent incidents are reported on Black Friday and other shopping-crazed holidays. In fact, a website called *Black Friday Death Count* has been created to tally and detail the injuries and deaths that occur directly from Black Friday promotional sales (<http://blackfridaydeathcount.com/>). This research shows that aggressive tendencies from scarcity not only occur in such contexts, but more importantly that aggression can *originate* from exposure to scarcity promotion advertising.

This research centres its investigation on scarcity promotions, a marketing tactic that emphasizes limited availability of a specific product or event (Ku, Kuo and Kuo 2012). We seek to empirically test the hypothesized relationship between scarcity promotions and consumer violence, a link previously confined to mass media observation and speculation. This research is the first to show that exposure to a scarcity promotion can lead to increased aggressive behavior among consumers. Importantly, we also uncover the underlying process driving this aggression and find that exposure to scarcity promotions lead consumers to perceive others as threats to obtaining the desirable good. This increased interpersonal threat, in turn, leads consumers to draw on established aggressive behavioral responses to mitigate this threat. Finally, we also identify a boundary condition to the proposed effects: scarcity promotion type (quantity vs. time), and show that aggression results when the promotion limits product quantity, but not time.

In study 1a, undergraduates (n = 140) were randomly assigned to conditions in a 2 (Promotional Ad: Scarcity, Control) design. Participants reviewed one of two promotional ads for an iPhone 5S from the university’s bookstore that served as our scarcity manipulation. To manipulate scarcity, we varied the quantity of iPhone 5s available to consumers via the promotion. In the scarcity (control) promotion, only 3 (3,000+) iPhones were available to consumers. After reviewing the Bookstore’s ad, participants moved to our measure of aggression ostensibly described as a separate study on classic video games: firearm shooting behavior. Specifically, participants were told that marketing researchers were investigating the recent trend among video game players towards classic video games and that they would be randomly assigned to play a classic game and report their experience. In actuality, all participants played an online first-person shooting game called “Deadeye” in which they aimed a gun to shoot at moving targets. We operationalized aggression as the shooting behavior of participants. As predicted, participants exposed to the scarcity promotion fired significantly more bullets than participants exposed to the control promotion. Study 1b used the same design and stimuli, but tested whether scarcity promotions could increase physiological responses associated with aggression. We measured testosterone levels and results showed that participants (n = 140) showed higher testosterone levels after exposure to scarcity (vs. control) promotions. Study 1c added a pure control condition (no mention of quantity) and demonstrated aggression in a consumption context. After exposure to the ad, participants (n = 201) were told to purchase a Reese bar from a vending machine we rigged to jam. We video-recorded participant behavior and results showed that participants exposed to scarcity (vs. control or abundance) promotions assaulted the machine significantly more.

Study 4 sought to provide process evidence. Undergraduates (n = 107) participated in this study in a 2 (Promotional Ad: Scarcity, Control) between participants design. Upon arrival, participants completed the scarcity manipulation and received the same classic video game cover story as study 1, but instead played a Wii boxing game and physically assaulted a defenceless human opponent. Sessions were recorded and coded for punches thrown. Participants then completed the following perceived interpersonal threat measure on a scale from 1 (not at all threatening) to 7 (very threatening): “How much do you perceive other people as a threat to you obtaining the product in the promotion?” Replicating studies 1a-1c, participants threw more punches at the defenceless opponent and perceived other consumers as higher threats to obtaining the product after exposure to the scarcity promotion than after exposure to the control promotion. The indirect effect of scarcity promotion on aggressive behavior through perceived threat was significant.

Study 5 manipulated perceived threat to further support our process claim using a different sample and aggression dependent variable. Online individuals (n = 160) participated in a 2 (Promotional Ad: Scarcity, Control) x 2 (Perceived Threat: High, Low) between-participants design. Before viewing the promotional ad, in the high (low) threat condition, participants identified two ways in which they were different (similar) to people from their city. Upon completion, they viewed one of the ads, then read a scenario about lining up to participate in a Black Friday sale and being positioned near the front of the line. Participants then completed the dependent measure: preference for violent video games. ANOVA revealed the predicted interaction: when perceived threat was high, scarcity participants choose significantly more violent games than control participants; however, when perceived threat was low no differences emerged.

Study 6 examined a boundary condition: promotion type. Given that all consumers choosing to participate in a limited time promotion would obtain the product as long as they arrived within the allotted time (e.g., the threat of other consumers is low), our framework predicts that aggression resulting from scarcity promotions should only occur when quantity, but not time, is limited. Undergraduates (n = 152) were assigned to conditions in a 2 (Promotional Ad: Scarcity, Abundance) x 2 (Type: Quantity, Time) + 1 (Control) design. We manipulated scarce quantity using the previous ads, but manipulated promotion time length to be 1 day only (scarcity) or 30 days (abundance). The procedure was otherwise identical to study 1. ANOVA revealed the predicted interaction: participants in the quantity conditions fired significantly more bullets after reviewing the scarcity versus abundance and control promotions. However, in the time conditions, aggression did not emerge.

In conclusion, this work demonstrates that merely exposing consumers to scarcity promotional ads leads to increased aggressive behavior. We find that this outcome results after exposure to scarcity promotion advertising because consumers perceive a potential threat of other consumers trying to obtain the desired product. To eliminate this threat, consumers resort to aggression.

For more information contact: [Kirk.Kristofferson@asu.edu](mailto:Kirk.Kristofferson@asu.edu)

## ***Individual Papers: External influences on consumer behavior: environment, society, and framing***

### ***An Organized Plate Leads to More Indulgence***

Aekyoung Kim, Rutgers University, USA\*

Saerom Lee, University of Texas at San Antonio, USA

Research has recognized importance of food presentation (e.g., in terms of portion or size, package, variety of an assortment) on consumers' food consumption (Kahn and Wansink 2004; Wansink 2004; Scott et al. 2008; Sela, Berger, and Liu 2009; Deng and

Srinivasan 2013). Yet, little is known about the impact of the food arrangement on preference for different types of food. Specifically, how does orderliness of food arrangement influence consumers' consumption of vices (i.e., unhealthy but indulgent food items; Khan and Dhar 2006; Thomas, Desai, and Seenivasan 2011) versus virtues (i.e., healthier food items)?

Prior research suggests that when an assortment of jelly beans has mixed colors (vs. is arranged by color), this increases perceived variety of the assortment and, in turn, consumption of jelly beans (Kahn and Wansink 2004). It has also been suggested that a disorganized environment (e.g., items scattered over the shelves, desk, floor) is likely to cause subsequent self-regulatory failure by threatening consumers' sense of control and depleting cognitive resources (Chae and Zhu 2014). Together, this prior work tends to suggest that disorganization (vs. organization) of food or environment will increase indulgent food consumption. In contrast, the present research proposes that an orderly (vs. disorderly) food arrangement will increase consumers' indulgent food consumption (i.e., preference for vices) by reducing consumers' desire to exert control over their behavior and negative behavioral outcomes of consuming vices.

Research has shown that organization or structure enhances one's sense of control (Cutright 2012; Kay and Eibach 2013; Friesen et al. 2014). Therefore, we suggest that food arranged orderly (vs. disorderly) will increase consumers' sense of control over the food and the given situation. This increased sense of control will in turn decrease their desire to further regulate or control their behavior. More specifically, we suggest that an orderly (vs. disorderly) arrangement of vices will increase consumer preference for vices due to reduced motivation to control indulgent behavior and the negative outcomes associated with indulgence. In contrast, an orderly (vs. disorderly) arrangement will not affect preference for virtues due to inherently lower need for control associated with consumption of virtues.

Study 1 examined relative preference for a vice (vs. virtue) when the food was arranged orderly (vs. disorderly). Participants were presented with pictures of two food items: chocolate chip cookies (vice) and pretzels (virtue). Depending on the food arrangement condition, either a well-organized array of cookies and pretzels or disorganized cookies and pretzels were shown in the pictures. When the food was organized (vs. disorganized), a greater proportion of participants (95.45% vs. 69.57%) were willing to choose chocolate chip cookies (vice) over pretzels (virtue;  $p < .05$ ).

Study 2 sought to improve the internal validity of the study 1 finding by employing a fully-crossed between-subjects design. Participants examined a picture of twenty-five chocolates (pretzels) in the vice (virtue) condition. In the orderly (disorderly) arrangement condition, the chocolates or pretzels were well-organized (disorganized). Participants had higher purchase intention for organized (vs. disorganized) chocolates ( $p < .05$ ). In contrast, purchase intention for pretzels was not affected by food arrangement ( $p > .35$ ), suggesting again the link between organization and indulgence.

Study 3 enhanced the external validity of the effect by exploring consumers' real food consumption behavior. Participants were presented with either nine chocolate chip cookies (vice) or pretzels (virtue) that are arranged either orderly or disorderly on a large plate. After that, participants were asked to serve themselves as many pieces of cookies or pretzels as they would like to eat on their personal plate. Participants served themselves more chocolate chip cookies when the cookies on the plate were organized (vs. disorganized;  $p < .05$ ). In contrast, serving size of pretzels did not differ regardless of the food arrangement manipulation ( $p > .45$ ).

Study 4 aimed to explore the underlying process of the effect through desire for control. Importantly, this study used pictures of the same product (white chocolates) across the different food type conditions to reduce any potential confound from using different visual images. The white chocolates were manipulated to be perceived as either a vice (white chocolate truffles) or a virtue (natural yogurt balls). Participants were asked to examine twenty-five white chocolates or yogurt balls that are either well-organized in an array or disorganized. Organization (vs. disorganization) increased purchase intention for chocolates ( $p < .05$ ). In contrast, food arrangement did not influence purchase intention for yogurt balls ( $p > .80$ ). We tested the underlying process of the effect through desire for control.

Indirect effect through desire for control was significant in the vice condition (CIs: -.63 to -.02) but not in the virtue condition (CIs: -.11 to .47), suggesting that decreased desire for control over negative outcomes of consuming the vice food underlies the effect of organization on preference for vices.

Study 5 strengthens the proposed underlying process by directly manipulating personal control over the environments. In the visualization condition, participants were asked to visualize the product when examining an ad, whereas in the control condition, there was no instruction regarding the visualization. After visualization (vs. control) manipulation, participants saw the same ad including a picture of chocolate cake with text regarding its hedonic benefits. In the fluency (disfluency) condition, the ad was easy-to-process (difficult-to-process). When the ad was easy-to-process, visualization manipulation led participants to have higher consumption intention for the chocolate cake ( $p=.01$ ). In contrast, when the ad was difficult-to-process participants' intention to consume chocolate cake did not differ regardless of the visualization manipulation ( $p>.73$ ).

Together, these findings demonstrate that consumer preference for vices increases when the vice is arranged orderly (vs. disorderly) because the orderly arranged vice reduces consumers' desire to control indulgent consumption. This research contributes to the literature on food consumption and self-control (Wilcox et al. 2009; Mishra and Mishra 2011; Argo and White 2012; Redden and Haws 2013) and provides practical implications for food marketers and consumers who are concerned with their eating habits by offering novel insight regarding the effect of food arrangement on self-control and indulgence.

For more information contact: [aekyoung.kim@rutgers.edu](mailto:aekyoung.kim@rutgers.edu)

#### ***An upbeat crowd: The effect of social density and instore music tempo on retail sales***

Klemens Knöferle, BI Norwegian Business School, Norway\*

Vilhelm Camilus Paus, Norges Varemesse

Alexander Vossen, BI Norwegian Business School

The ambience of retail stores has become increasingly important in past years (Kaltcheva & Weitz, 2006). One ambient factor that has received considerable research interest is instore crowding, shoppers' subjective experience of limited space induced by social density (Harrell, Hutt, & Anderson, 1980; Hui & Bateson, 1991; Machleit, Eroglu, & Mantel, 2000). In non-hedonic settings such as retail stores, high perceived crowding has primarily been associated with negative outcomes such as stress, negative feelings, reduced feelings of control, and reduced spending (Eroglu & Machleit, 1990; Machleit et al., 2000). Yet, from a shop owner's perspective, social density is desirable, as more customers typically lead to more sales. More recently, researchers have proposed an inverted U-shaped relationship between crowding and retail outcomes, with positive effects occurring at intermediate levels and negative effects at higher levels of crowding (Mehta, Sharma, & Swami, 2013; Pan & Siemens, 2011).

Following a recent call for research (Mehta, 2013), we examined whether the negative impact of high social density on retail outcomes can be compensated by other ambient factors. Specifically, we tested the moderating effect of instore music tempo on the relationship between social density and retail outcomes. Music tempo refers to the speed of a detectable pulse in music, measured in beats per minute (BPM; see Bruner, 1990). Music tempo seems particularly relevant as a potential moderator due to its strong effects on consumers' emotions and behaviour and because it can easily be varied in most types of music.

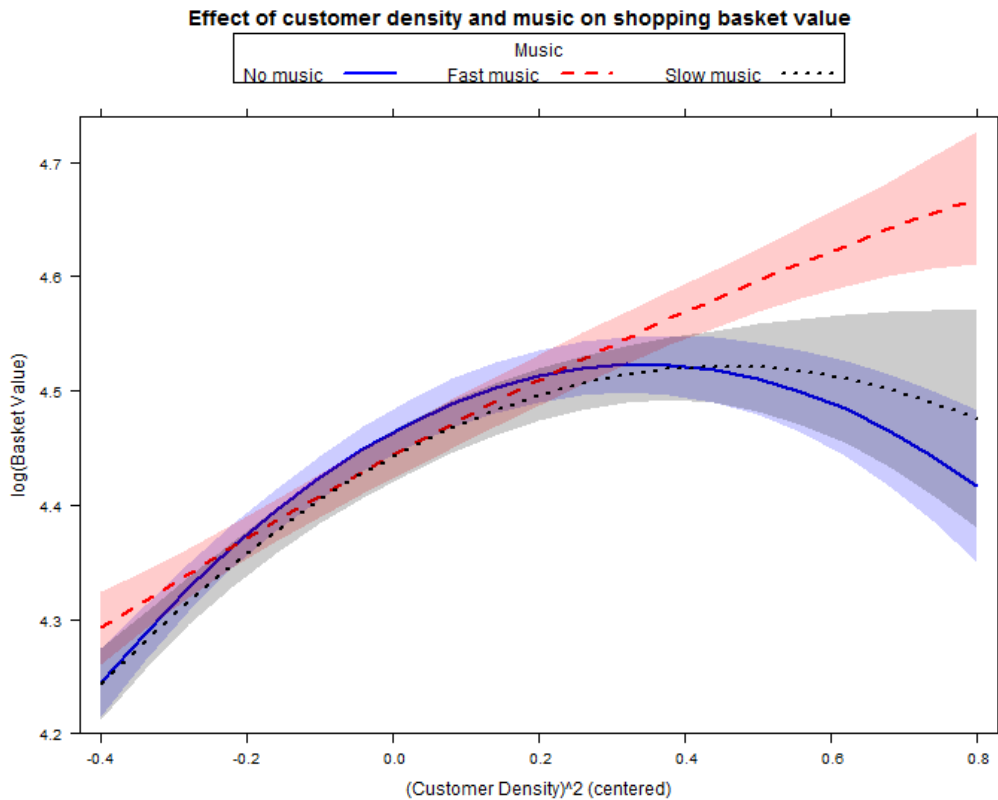
Theoretically, two scenarios of how in-store music tempo might moderate the negative effects of social density seem possible: On the one hand, slow music might reduce the negative arousal induced by crowding. Slow, relaxing music has been shown to increase sales in

supermarkets (Milliman, 1982), restaurants (Milliman, 1986), and department stores (Knöferle, Spangenberg, Herrmann, & Landwehr, 2012), supposedly by reducing consumers' pace and thus increasing the likelihood for unplanned purchases. On the other hand, fast music might be more effective in high crowding conditions, since its high arousal matches the high arousal induced by crowding. This latter account is supported by research showing that congruent levels of arousal in ambient music and smell increase consumers' self-reported satisfaction and behavioral intentions (Mattila & Wirtz, 2001). Moreover, high arousal may stimulate impulse buying in shoppers as it impairs self-regulation and people's ability to think through their actions (Baumeister, 2002). Consistent with this notion, a number of studies have reported positive effects of ambiance-induced overstimulation on self-reported purchasing behavior (Mattila & Wirtz, 2008).

In order to test these competing predictions, a large-scale, longitudinal field experiment was conducted in six convenience stores in a European capital during six weeks in May and June 2014. Instore music (slow, fast, no music) was manipulated by switching between music playlists of varying tempo on a daily basis (Knöferle et al., 2012; Milliman, 1982). Special care was taken to ensure that the music in both playlists was similar except for the tempo difference (mainstream pop music obtained from a commercial radio station). Full counterbalancing guaranteed that the music conditions were evenly distributed across days, weeks, and stores. Instore crowding was operationalized through customer density (i.e., the number of shoppers in a store at a given moment) and measured as the number of transactions within an hour, divided by store area size (Levav & Zhu, 2009). We electronically recorded each customers' shopping basket value, the number of purchased items, and average item price.

Shopping baskets from over 40'000 customers (log-transformed due to non-normality) were analyzed using OLS regression, controlling for time of the day, day of the week, week, store ID, and various weather variables. The model revealed significant main effects of music, density, density squared, and the interaction of music and density squared. Our results confirmed an inverted-u shaped pattern for customer density. Fast in-store music had, on average, a positive effect on individual shopping basket value. Importantly, we found evidence for the moderating role of music on the effect of social density on shopping basket value: When social density was low to medium, instore music tempo did not have a significant impact on basket value. However, when customer crowding was high, fast in-store music had a strong positive effect on basket value (see figure).

Our results have clear implications for consumer research and management practice alike. From a theoretical point of view, our results advance the literature on instore crowding by (1) analyzing objective data rather than customer self-reports, (2) confirming an inverted-u-shaped effect of crowding on sales, and (3) identifying ambient factors that mitigate negative effects of crowding. We contribute to the literature on instore music by showing, for the first time, conditions under which fast music is more effective than slow music (cf. Knöferle et al., 2012; Milliman, 1982, 1986). Our results also have clear implications for management practice, as they show that retail managers should be aware of the interplay between ambient music and customer density. For retailers, music may be an efficient means of countering the negative effects of high consumer density, complementing other known strategies such as providing a greater degree of choice (Hui & Bateson, 1991), or varying the interior design (Baum & Valins, 1977).



For more information contact: [klemens.knoferle@bi.no](mailto:klemens.knoferle@bi.no)

***The Role of Expertise in the Emergence of Minority Influence***

Joshua Clarkson, University of Cincinnati, USA\*

Riley Dugan, University of Dayton, USA

It is almost a truism that individuals are more influenced by the statistical majority than minority (Festinger, 1954). Yet individuals are—on rare occasion—more influenced by the statistical minority (see Wood et al., 1994). Our interest is whether individuals’ expertise plays a critical role in the persuasive influence of the statistical majority and minority.

In short, we contend that novices are motivated to reflect social correctness in their attitudes, whereas experts are motivated to reflect novelty and progression in their attitudes. As a result, we posit that novices view themselves as similar to those aligning with the socially-dominant position (i.e., the statistical majority), whereas experts view themselves as similar to those who challenge the socially-dominant position (i.e., the statistical minority). Moreover, given individuals are more persuaded by similar others (Festinger, 1954), we expect novices to be more influenced by the statistical majority and experts to be more influenced by the statistical minority.

Critically, this effect should only occur when deviations from the social norms are viewed as favorable—such as when deviation implies innovation (Moscovici, 1985). Thus, we intentionally focused on domains evaluated by subjective criteria (Marks & Miller, 1987).

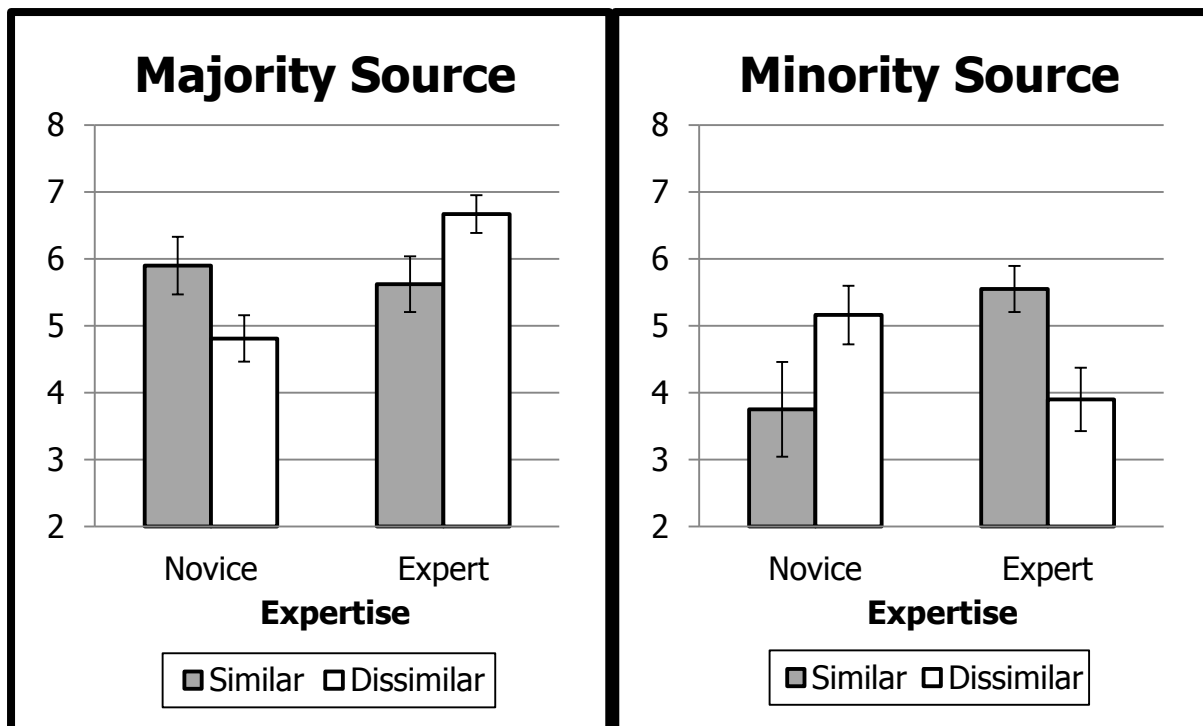
In Experiment 1, 97 participants received a series of five design pairs, with each design endorsed by either a minority (ranging from 11-24%) or majority (89-76%), and responses were averaged such that higher values indicated greater preference for the majority option.

We also obtained an assessment of subjective expertise toward architecture design. A simple regression analysis with subjective expertise (continuous, mean-centered) as the predictor revealed a significant association between subjective expertise and endorsement ratings ( $b = -.037, t(97) = -2.66, p = .009$ ). In short, as subjective expertise increased, participants were more likely to endorse the design supported by the statistical minority.

To test the mediating role of perceived similarity, Experiment 2 directly manipulated the extent to which individuals' viewed the source as similar to the self. Specifically, 156 participants were provided with false feedback concerning either the *similarity* or *dissimilarity* of their responses to other participants on a personality survey. Additionally, to bolster our causal inferences related to expertise, we directly manipulated participants' subjective expertise by informing them that most individuals are novices (experts) concerning wine and to list three reasons from their own experience consistent with being a novice (an expert). Both manipulations were adapted from prior research. Finally, participants read about a small winery, were informed that an estimated 82% (*majority*) or 18% (*minority*) of other participants' reported a favorable attitude toward the winery. We then had participants indicate their willingness to purchase a bottle of wine from the winery on a 9-point scale anchored at *Not willing at all—Very willing*.

The findings revealed a significant three-way interaction ( $F(1,148) = 16.68, p < .001$ ; see Figure 1). In the *majority* condition, we observed a significant expertise  $\times$  similarity interaction ( $F(1,81) = 6.45, p = .013$ ); novices reported a greater willingness to purchase from the winery when the majority was perceived to be similar to them ( $p = .038$ ), whereas experts reported a greater willingness to purchase from the winery when the majority was perceived to be dissimilar to them ( $p = .12$ ). In the *minority* condition, we again observed a significant expertise  $\times$  similarity interaction ( $F(1,67) = 10.08, p = .002$ ); experts reported a greater willingness to purchase from the winery when the minority was perceived to be similar to them ( $p = .011$ ), whereas novices reported a greater willingness to purchase from the winery when the minority was perceived to be dissimilar to them ( $p = .058$ ).

**Figure 1.** Willingness to purchase as a function of subjective expertise and perceived similarity in the majority (left-panel) and minority (right-panel) source in Experiment 2.

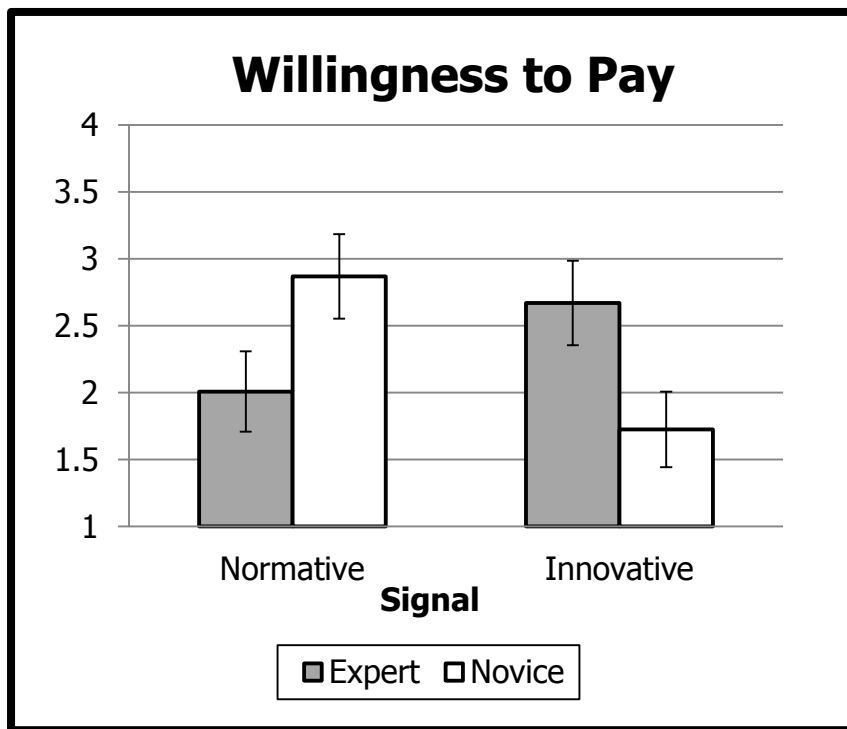




Critical to this research is the argument that novices are more persuaded by the majority opinion because it reflects the normative opinion, whereas experts are drawn to the minority opinion because it reflects an innovative option. To explore this argument, Experiment 3 presented 155 participants with a biased scale of five items asking about their expertise with popular music. Those in the *expert (novice)* condition responded to each item on a 5-point scale ranging from *An average amount (Very little amount)* to *A great deal (An average amount)* (Petrocelli, Martin, & Li, 2010). Participants were then informed of our interest in their evaluation of a new band featured in Q magazine—a UK magazine about pop music. Those in the *normative (innovative)* condition read that Q magazine’s success is due to their conventional (unconventional) and traditional (non-traditional) perspective on music. They were then presented information about a new band called Lifeline, told that Q conducted an online survey which revealed that either 84% (*majority*) or 16% (*minority*) of respondents would download music by Lifeline, and then indicated their willingness to pay for a Lifeline song on a 9-point scale anchored at *Not willing at all—Very willing*.

The findings revealed a significant expertise × signal interaction ( $F(1,147) = 8.83, p = .003$ ; see Figure 2); novices reported a greater willingness to pay in the normative condition ( $p = .053$ ) whereas experts reported a greater willingness to pay in the innovative condition ( $p = .027$ ). Importantly, neither the other two-way effects nor the three-way interaction was significant ( $F_s < 1$ ). Thus, participants’ placed greater weight on the inference of the magazine as normative or innovative rather than source information (which presumably signaled this information in Experiments 1 and 2).

**Figure 2.** Willingness to pay as a function of subjective expertise and social signal in Experiment 3.



This research offers a novel means of understanding the emergence of minority influence, as experts consistently showed greater reliance on the statistical minority relative to novices. Importantly, this effect only occurred when experts perceived themselves as similar to the minority and when the source of influence (minority or majority) signaled innovation. Consequently, these findings highlight when deviations from the social norm can be view favorably and when this favorable deviation can heighten persuasion.

For more information contact: rdugan1@udayton.edu

## ***Framing Choice as an Opportunity Encourages Situational Attribution***

Ernest Baskin, Saint Joseph's University, USA\*

Nathan Novemsky, Yale University, USA

Ravi Dhar, Yale University, USA

Opportunity:

A favorable combination of circumstances, time, and place

Merriam-Webster Dictionary (2014)

In both profit and non-profit sectors, marketers often position their products as an opportunity. For instance, Honda ran an ad campaign centered around a character named Mr. Opportunity who let viewers know that opportunity was knocking for them to buy a car. In the non-profit sector, many organizations position their volunteer and donation appeals as an opportunity to support their charity's mission. In fact, the five universities with the highest endowments all discuss charitable giving as an opportunity to make a gift to an institution of higher learning. Despite consistent use of the word, "opportunity," by marketers, relatively little is known about how thinking about a choice or decision as an opportunity affects consumer cognition and preferences.

We propose that when a choice is framed as an opportunity, the salience of the situation is increased. This increases the tendency to attribute the choice to the situation (Storms 1973). Generally, research has found that choices influence individuals' self-concept (Bem 1972) and these influences can be anticipated (Bodner and Prelec 2003). However, once the attribution shifts to the situation, choice attribution shifts to the situation and their impact on one's self-concept is reduced thus shifting preferences.

In many important choices, consumers are confronted with vices - tempting, impulsive options that have a negative association with the self-concept (e.g., they make consumers feel that they are someone who has low self-control; Dhar and Wertenbroch 2012; Khan and Dhar 2006). We propose that when a vice is considered as an opportunity, the situation becomes the perceived basis of choice for the vice. This leads to fewer negative self-inferences if the vice is chosen since the reason for the choice can be attributed to the situation rather than the self. Lacking negative repercussions to the self-concept, preferences for vice opportunities increase.

It is important to note that the shift in attribution of the choice to the situation does not predict a general increase in an option's choice share when viewed as an opportunity. Rather, the change in preference depends on how choosing the option affects the self-concept. Consumers often face virtuous options - options linked to more positive, long-term aspects of the self-concept (Dhar and Wertenbroch 2012; Khan and Dhar 2007). Accordingly, when a virtuous option is framed as an opportunity, the choice of that option is more likely to be attributed to the situation, thus decreasing the positive benefits to one's self that would otherwise be received from choosing that option, and, therefore, preference for that option decreases.

To illustrate, consider a person who is deciding whether or not to choose an indulgent chocolate cake for dessert at a restaurant. Choosing to consume the chocolate cake may entail negative attribution about one's self-concept and hence may decrease the willingness to choose the chocolate cake (Okada 2005). However, if the choice of the same indulgent chocolate cake is an opportunity, the person might focus on the situation that brought about the chance for them to have chocolate cake. Thus, the negative costs to their self-concept from choosing the chocolate cake, such as thinking that they are unhealthy or have low self-control, decrease. Since the costs decrease and the benefits remain the same, it becomes more likely for the person to choose the chocolate cake.

Conversely, imagine a person who is called by their university alumni association for a donation. They might choose to donate because they want to signal something good about themselves when making their decision (Gneezy et al. 2012; Savary, Goldsmith, and Dhar

2014). However, the donation becomes a less diagnostic signal that the person cares about their alma mater when it is framed as an opportunity by the university. This is because the donation is attributed to the specific situation, such as the alumni officer calling them and asking for a donation. Thus, the donation's positive self-benefits decrease and therefore, the individual is less likely to donate. The present research differs from previous research in several important ways. First, to the best of our knowledge, it is the first to demonstrate that framing a choice as an opportunity can influence attributional processes and subsequent preferences. Second, we show that this novel framing effect, i.e. opportunity framing, operates like a mindset and can persist and affect subsequent choices much like other mindsets. Finally, our research has important implications for any product whose choice results in either positive or negative self-attribution.

To explore the effects of opportunity frames on choice, we conducted six studies. Studies 1A and 1B show that preference for a vice increases when participants think about the choice as an opportunity. In support of our theory, the extent of the vice choice's dispositional attribution mediates this effect. Study 2 demonstrates that, in an opportunity frame, virtuous choices, such as donating to charity, become less preferred. Study 3 supports our underlying mechanism that opportunity framing of a choice increases situational attribution by putting participants in a strongly dispositional mindset and showing that this attenuates the effects of an opportunity frame. Next, we demonstrate that opportunity framing can lead to a temporary mindset that carries over to unrelated choices. Study 4 shows that thinking about several events as opportunities prior to making an unrelated choice can cause that choice to be viewed as an opportunity. Finally, in study 5, we show that the use of the word opportunity in an advertisement is sufficient to induce an opportunity frame and generate both an increased preference for a vice and a decreased preference for a virtue.

For more information contact: ebaskin@sju.edu

## ***Individual Papers: Consumption, Decisions, Judgments and Construal Over Time***

### ***The Value of Nothing: Asymmetric Attention to Opportunity Costs Drives Intertemporal Decision Making***

Daniel Read, University of Warwick, United Kingdom

Christopher Y. Olivola, Carnegie Mellon University, USA

David J. Hardisty, University of British Columbia, Canada\*

Consumers are frequently faced with intertemporal choices that require them to tradeoff smaller-sooner outcomes and larger-later ones: Should a person consume now or invest to enable more consumption later? Each option has opportunity costs. The opportunity cost of choosing the smaller-sooner option is having to forgo the other, larger outcome later on, and vice-versa. However, studies have shown that consumers often neglect opportunity costs when making decisions, and that highlighting these opportunity costs can shift their preferences (Frederick et al. 2009; Spiller 2011). We show that highlighting the opportunity costs associated with intertemporal choice options also alters their attractiveness, but in an asymmetric fashion.

To explore the role of opportunity cost salience in intertemporal choice, we build on the work of Magen, Dweck, and Gross (2008), who showed that making both opportunity costs explicit increased the proportion of patient (i.e., larger-later) choices. Specifically, they found that compared to the standard (or "hidden zero") frame (e.g., would you prefer to receive \$100 today OR \$150 in one year?), a normatively equivalent description of the problem which makes two zero outcomes explicit (the "explicit zero" frame: would you prefer to receive \$100 today and \$0 in one year OR \$0 today and \$150 in one year?) led to more patient (larger-later) choices. Magen et al. (2008) had offered two types of explanations for this "hidden zero" effect: (i) that it operates by turning the smaller-sooner option into a decreasing sequence (thus making it less appealing) and the larger-later option into an increasing sequence (thus increasing its appeal)

OR (ii) that it operates by highlighting the opportunity costs associated with each option. The latter explanation is problematic without additional assumptions, since the “explicit zero” condition highlights the opportunity costs associated with both options, and thus does not yield a clear prediction that consumers will become more patient under this frame.

In Study 1, we tested both of these explanations by replicating their study and adding 3 new framing conditions: (i) a “middle zero” frame, in which a zero outcome was added halfway between the two outcome timings (e.g., would you prefer to receive \$100 today and \$0 in six months OR \$0 today and \$150 in six months?); (ii) an “LL zero” frame, which only made the zero associated with the larger-later choice explicit (e.g., would you prefer to receive \$100 today OR \$0 today and \$150 in one year?); (iii) an “SS zero” frame, which only made the zero associated with the smaller-sooner choice explicit (e.g., would you prefer to receive \$100 today and \$0 in one year OR \$150 in one year?). Although the “middle zero” frame also turns the two options into decreasing and increasing sequences, it did not significantly differ from the “hidden zero” frame (in terms of the proportion of larger-later choices made), thus ruling out the sequence explanation. The “LL zero” frame also did not differ from the “hidden zero” frame. However, the “SS zero” frame led to significantly more patient choices than the “hidden zero” frame. In fact, the “SS zero” frame was nearly identical to the “explicit zero” frame. Thus, it seems the “explicit zero” manipulation works entirely through the presence of the zero outcome associated with the smaller-sooner outcome, whereas the other (LL) zero has no impact.

In studies 2-5, we replicated this pattern of results and showed that it holds when we vary the magnitudes of the payoffs associated with each outcome (Study 2), when we add a constant delay to both options (Study 3); it holds for losses as well as gains (Study 4), and it holds for real as well as hypothetical choices (Study 5). Study 5 also measured decision times and showed that participants are chronically aware of immediate (but not future) opportunity costs: the “LL zero” frame did not affect decision times, whereas the “SS zero” frame significantly increased decision times (indicating that it provided new information, thereby prompting additional processing). In fact, participants’ decision times fully mediated the effect of the “SS zero” frame on patience.

In Study 6, we employed a repeated-measures design in which participants were exposed to the standard (“hidden zero” frame) after being exposed to one of the 3 zero-type frames. We find that being exposed to the “explicit zero” or “SS zero” frame leads participants to be more patient when they are subsequently presented with the same choice pairs without any zeros made explicit, whereas being first exposed to the “LL zero” frame has no effect on subsequent patience under the “hidden zero” frame. Thus the effect of highlighting opportunity costs associated with choosing smaller-sooner options carries over into subsequent choices. Moreover, we found that these same participants did not predict the effect of highlighting the “SS zero”, suggesting that this effect defies lay intuitions and may be occurring unconsciously, to some extent.

Finally, in Study 7, we had participants list their thoughts while deciding between the smaller-sooner and larger-later option. We found that, regardless of condition, hardly any participants mentioned the opportunity costs associated with each option: Less than 1% (4 out of 552) of thoughts listed mentioned receiving nothing now, and less than 2% (8 out of 552) mentioned receiving nothing in the future. This further suggests that the “SS zero” effect operates below conscious awareness.

In sum, we find that intertemporal choice is driven by asymmetric attention to the opportunity costs associated with smaller-sooner vs. larger-later outcomes: Consumers, it seems, are naturally aware that choosing the larger-later option means forgoing immediate consumption (which is why the “LL zero” frame did not alter preferences, relative to the “hidden zero” frame). In contrast, they are less chronically attentive to the fact that choosing the smaller-sooner option entails losing out on the opportunity to consume more later on. As a result, highlighting this fact (by making the “SS zero” salient) leads them to become more patient. In fact, our results show that the “explicit zero” frame originally proposed by Magen et al. (2008) works entirely through the presence of the “SS zero”.

For more information contact: david.hardisty@sauder.ubc.ca

## ***The Parenting Mindset: Does Caring For Children Trigger a Focus on the Present or the Future?***

Yexin Jessica Li, University of Kansas, USA\*

Vladas Griskevicius, University of Minnesota, USA

Kelly Haws, Vanderbilt University, USA

Parents comprise one of the largest and most important segments of consumers in the world, responsible for financial decisions that affect their family's well-being as well as the health of the global economy. In the current research, we investigate how *the parenting mindset*, activated by thoughts of caregiving, influences temporal orientation and financial decisions. Consistent with the conceptualization of mindset as the persistence of goals and motivations (Keinan and Kivetz 2011), a parenting mindset reflects the activation of the parental care motivation system (Kenrick et al. 2010). Importantly, though this mindset is likely to be activated frequently in parents, it can be activated in non-parents as well (Sherman Haidt and Coan 2009). Once triggered, mindsets persist over different tasks and contexts (Luchins 1942), influencing subsequent thoughts and decisions.

How does the parenting mindset affect temporal orientation? Extant literature suggests child-care responsibilities differ by sex. Mothers, even those that are highly educated and employed, tend to be the primary caregivers in the majority of households (Acock and Demo 1994; Aneshensel Freichs and Clark 1981; Biller 1993; Ferriman Lubinski and Benbow 2009; Ross and Van Willigen 1996). Effective primary caregiving requires prompt and timely responses to offspring cues (Bowlby 1969; Bradley and Corwyn 2007), and thus necessitates a focus on the present. In contrast, fathers are usually less involved in the daily care and supervision of children, but are the main resource providers (LaRossa 1986; Geary 2000), which suggests they attend more to the child's future needs. A pilot study with 51 participants provided support for this sex-difference. Specifically, the parenting mindset led women to focus more on a child's immediate needs than men (e.g., "making sure the child's immediate needs are met"),  $F(1, 49)=8.94, p=.004, \eta_p^2=.15$ . Thus, we hypothesize that the parenting mindset might lead women to be more present-focused and men to be more future-focused.

Three experiments were conducted to test this hypothesis. In Study 1, 130 students (71 female;  $M_{age}=19.2$ ) participated in a 2 (mindset: parenting, control) by 2 (participant sex: male, female) between-subjects design. In both mindset conditions, participants read a short guided-visualization scenario. In the parenting condition, participants imagined taking care of their nephew. In the control condition, they imagined looking for their keys. A pretest with 116 participants confirmed that the parenting condition successfully elicited thoughts of parenting and feelings of nurturance, love, responsibility, and devotion in both men and women. To assess temporal orientation, participants completed the Consideration of Future Consequences scale (Strathman et al. 1994). An ANOVA revealed a significant mindset by participant sex interaction,  $F(1, 126)=7.61, p<.01, \eta_p^2=.06$ . Women in the parenting (vs. control) condition were more present-oriented,  $F(1, 126)=4.13, p<.05, \eta_p^2=.03$  while men in the parenting condition were marginally more future-oriented,  $F(1, 126)=3.54, p=.06, \eta_p^2=.03$ .

In Study 2, 102 participants (51 female  $M_{age}=35.8$ ) were randomly assigned to view and respond to images of baby faces (in the parenting condition) or nature scenes (in the control condition). A pretest with 157 participants confirmed that the parenting condition activated thoughts of parenting and feelings of nurturance, love, responsibility, and devotion in both men and women. Next, participants completed a validated intertemporal choice measure, consisting of nine binary choices between receiving \$120 immediately or receiving varying amounts of money in one year (Hardisty and Weber 2009; Joshi and Fast 2013). To make the task incentive compatible, participants were told that one person in the study would be randomly selected to receive payment based on their choices. Following previous research, we used the titration procedure to obtain the point at which participants equally valued present and future gains. As predicted, an ANOVA revealed a significant interaction,  $F(1, 96)=10.62, p<.01, \eta_p^2=.10$ . Women discounted the future *more* in the

parenting condition than in the control condition,  $F(1, 96)=4.14, p<.05, \eta_p^2=.04$  while men discounted the future *less*  $F(1, 96)=6.47, p<.05, \eta_p^2=.06$ .

Next, we explore a potential mediator for our effects. Because of the different parenting roles typically adopted by men and women, the parenting mindset may influence temporal orientation by altering construal level, leading women to adopt a concrete construal and men to adopt an abstract construal (Lieberman and Trope 1998). Construal level, in turn, affects temporal discounting (Fujita et al. 2006; Malkoc, Zauberman, and Bettman 2010) and is thus predicted to be responsible for the observed sex-difference in studies 1 and 2. In Study 3, 179 participants (108 female;  $M_{age}=34.2$ ) were randomly assigned to the manipulation scenarios from Study 1. Immediately afterward, participants completed the Behavioral Identification Form (BIF; Vallacher and Wegner 1989), a commonly used measure of construal level (e.g., Agrawal and Wan 2009; Tsai and McGill 2011) followed by the incentive-compatible temporal discounting measure used in Study 2. Participants also completed the PANAS (Watson Clark and Tellegen 1988) to rule out positive and negative affect as an alternative explanation for our effects. The results of this study showed the predicted interaction between participant sex and mindset on construal level ( $F(1, 172)=7.87, p<.01, \eta_p^2=.04$ ) and future discounting ( $F(1, 172)=7.98, p<.01, \eta_p^2=.04$ ). Importantly, a moderated mediation analysis with 10,000 bootstrapped samples (model 8; Hayes 2013) was also significant (CI: -.2945 to -.0164); thus, construal level mediates the relationship between parenting and temporal discounting for both men and women. Additionally, no main effects of participant sex ( $ps > .13$ ), condition ( $ps > .74$ ) or their interaction ( $ps > .42$ ) were found on the PANAS, suggesting our results are not attributable to emotion.

The results of three experiments suggest the parenting mindset affects men and women in different ways. Women prefer smaller, immediate rewards to larger, future rewards while men exhibit the opposite preference. We also found support for construal level as a mediator of these effects. The parenting mindset leads to concrete (abstract) construal in women (men), which increases their present (future) orientation. This research advances understanding of how the parenting mindset influences time perception and temporal discounting, and has implications for important financial decisions often made by parents, such as retirement funds, investment portfolios, and insurance policies.

For more information contact: Jessica.Li@ku.edu

### ***The Heterogeneity of an Experience Moderates the Peak Effect in Retrospective Evaluations***

Robert Latimer, University of Toronto, Canada\*

We explore how the heterogeneity of an experience changes the influence of the most intense moment of an experience (peak) on retrospective evaluations of the experience as a whole. Prior research has shown the peak is a powerful predictor of overall evaluations (Fredrickson, 2000). This phenomenon—described by the peak-end rule—is an example of judgment by prototype (Kahneman, 2003). Instead of representing the entirety of an experience in memory, people instead store an abstraction of the experience drawn from a few key moments. In this paper we manipulate the heterogeneity of experiences in order to change reliance on a prototype representation.

Two streams of research hint how the heterogeneity of an experience will moderate the peak effect. Replications of the peak-end rule across different types of experiences reveal that the peak effect is less robust for long, complex experiences such as a vacation (Kemp, Burt, & Furneaux, 2008) or the events of a week (Ben-Zeev, Young, & Madsen, 2009) or day (Miron-Shatz, 2009). This pattern is consistent with the literature on categorization. Prototype models tend to perform best for simple stimuli such as patterns of dots (e.g., Smith & Minda, 2002). Exemplar models, in which every stimulus is stored in memory, better predict categorization for complex, feature-rich stimuli such as imaginary creatures (Yamauchi & Markman, 2000). If heterogeneity increases the complexity and

feature-richness of an experience, people should shift from using a prototype representation to an exemplar representation. This shift may reduce the peak's impact on retrospective evaluations.

### Study 1

Study 1 ( $N = 930$ ) was designed as both a pretest and an opportunity to test the effect of heterogeneity on the predictive power of peaks and ends. Participants viewed and rated their liking of 20 paintings and each painting's similarity to the other paintings in the set. Participants viewed either 20 paintings of the same style (homogenous condition, 9 style replicates) or 20 paintings drawn randomly from all 9 styles (heterogeneous condition). Finally, participants indicated their overall enjoyment of the set.

Following Kahneman and colleagues (e.g., Shreiber & Kahneman, 2002; Fredrickson & Kahneman, 1993), we tested the the peak-end rule by examining the correlations between online and retrospective evaluations. Both peak and end liking ratings were more closely correlated to overall enjoyment in the homogenous condition ( $z_{\text{peak}} = 3.8, p < .0001$ ;  $z_{\text{end}} = 4.11, p < .0001$ ; Steiger, 1980).

### Studies 2A & 2B

Study 2A ( $N = 386$ ) demonstrates that the addition of a highly enjoyable peak (vs. moderately enjoyable peak) produces greater retrospective enjoyment for participants viewing a more homogenous set of art. Participants viewed 10 paintings for 20 seconds each. As in Study 1 we manipulated heterogeneity by presenting participants with paintings all of the same style (homogenous) or 2 paintings of each of five styles (heterogeneous). Both conditions had five replicates that were collapsed together during the analysis. In all conditions, eight of the paintings were selected to be moderately liked based ratings in Study 1 ( $M_{\text{background}} = 45.3$ ). For half of the participants we added two highly liked paintings ( $M_{\text{hipeak}} = 74.2$ ) and for the remaining participants we added two moderately liked paintings ( $M_{\text{lopeak}} = 59.8$ ).

Participants in the homogenous condition indicated a greater increase in retrospective enjoyment due to the higher peak ( $M_{\text{hipeak}} = 68.2, M_{\text{lopeak}} = 54.6$ ) than participants in the heterogeneous condition ( $M_{\text{hipeak}} = 64.0, M_{\text{lopeak}} = 59.3$ ) ( $F(1, 382) = 5.21, p < .05$ ).

In Study 2A, participants in the high peak condition also experienced a set with a higher mean liking rating. Study 2B corrected this by changing the 8 moderately liked paintings across conditions to keep the mean consistent despite the changing intensity of the peak ( $M_{\text{overall}} = 51.1$ ).

Replicating Study 2A, participants in the homogenous condition indicated a greater increase in retrospective enjoyment due to the higher peak ( $M_{\text{hipeak}} = 74.8, M_{\text{lopeak}} = 63.4$ ) than participants in the heterogeneous condition ( $M_{\text{hipeak}} = 65.6, M_{\text{lopeak}} = 67.4$ ) ( $F(1, 609) = 6.80, p < .01$ ).

### Study 3

In Studies 1 and 2, heterogeneity was achieved by mixing art from disparate styles. However, the styles themselves also vary in how similar one painting is to the next. Using the similarity ratings from Study 1, we selected the styles for which paintings were most similar to one another (Pollock Drip) and most different from one another (Watercolor Portraits). For just these styles, participants in Study 3 ( $N = 562$ ) were presented with sets containing either high or low peaks, as in Study 2B.

Participants with the more similar set indicated a greater increase in retrospective enjoyment due to the higher peak ( $M_{\text{hipeak}} = 74.8, M_{\text{lopeak}} = 63.4$ ) than participants with the less similar set ( $M_{\text{hipeak}} = 65.6, M_{\text{lopeak}} = 67.4$ ) ( $F(1, 558) = 8.32, p < .01$ ).

### Study 4

In Study 4 ( $N = 784$ ), we manipulated the perceived homogeneity of a set with processing style. Participants viewed a series of 8 Navon

figures—large letters made up of many smaller letters—(Navon, 1977) and were prompted to respond with either the large letter (global processing) or the smaller letter (local processing). Local processing may reduce the perceived similarity between stimuli, in turn reducing reliance on prototypes and decreasing the magnitude of the peak effect. In all other aspects Study 4 replicates the homogenous condition of Study 2b.

Participants in the global processing condition indicated a greater increase in retrospective enjoyment due to the higher peak ( $M_{\text{hipeak}} = 78.8$ ,  $M_{\text{lopeak}} = 69.8$ ) than participants with the less similar set ( $M_{\text{hipeak}} = 68.3$ ,  $M_{\text{lopeak}} = 64.5$ ) ( $F(1, 780) = 8.01$ ,  $p < .01$ ).

## Conclusion

Over four studies we demonstrate that high peaks have a larger influence on retrospective evaluations of experiences when those experiences are more homogenous or are processed more globally. Our results both provide evidence for the mechanism underlying the peak effect—prototype representations of experiences—and suggest boundaries—heterogeneous experiences. Although we happily concede that other mechanisms may also produce peak effects (e.g., distinctive, memorable peaks represented as exemplars, Montgomery & Unava, 2009).

For more information contact: rlatimer@stern.nyu.edu

## *What is Essential to the Self? The Structure of the Self-Concept*

Stephanie Chen, University of Chicago, USA\*

Oleg Urminsky, University of Chicago, USA

Daniel Bartels, University of Chicago, USA

Identity has a large influence on behavior. It provides us with norms and scripts to follow, and ways to interpret our actions (Markus & Wurf, 1987). Thus, it is not surprising that identity has a large influence on consumer behavior. It has been suggested that our possessions and consumption, at least in part, make up our self-concept (Belk, 1988) and that brands become integrated into our self-concepts to the extent that they are associated with features of it (Escalas & Bettman, 2003, 2005). As such, understanding what makes up identity and what is most central to the self-concept is crucial to understanding its influence on consumer behavior (Reed et al., 2012; Urminsky et al., 2014). Little research in consumer behavior, however, has examined what determines the relative importance of different parts of one's identity. The following paper examines what features of identity are most central to the self-concept.

Recent research has also suggested that the extent to which we perceive the self as changing over time impacts our financial decisions. People who believe that they will experience changes that will impact their identity exhibit greater discounting of future rewards (Bartels & Urminsky, 2011; Ersner-Hershfield et al., 2009) and are less likely to prioritize savings goals in purchase decisions (Bartels & Urminsky, 2015). From this perspective, understanding the structure of the self-concept is important for knowing what types of changes are more or less disruptive to identity, and thereby for consumer decisions.

Our investigation takes a novel approach to studying identity. It is based on the seminal finding from the psychological study of concepts that a feature is seen as defining a concept to the extent that it is perceived as causally linked to other features of the concept (Rehder & Hastie, 2001). We propose that the self-concept follows the same principle—aspects of identity perceived as having greater causal impact, operationalized as the number of other aspects it is causally linked to, serve as the foundation of the self-concept. To illustrate, imagine two people, Ann and Jane. Ann believes that her personality caused many of her close relationships and choice of profession. Jane instead believes that it was her close relationships that shaped her personality and choice of profession. Our account predicts that



even if the personality, profession, and relationships of the two are identical, their self-concepts will be fundamentally different. That is, personality will be more central to Ann's self-concept than Jane's, while Jane's relationships will be more central.

In Study 1, we used a novel concept map task to examine how causal knowledge impacts judgments about one's own identity. Subjects drew causal relationships between 16 important features of their identity (e.g., some subjects reported that their *memories of time with parents/family* caused them to develop their *favorite hobbies/activities*). To determine causal centrality of each feature, we calculated the number of causal relations each feature was involved in. Subjects also reported how disruptive a change to each feature would be to their personal identity (i.e., *If feature X changed, would you be exactly the same person or a completely different person?*). Consistent with the hypothesis that more causally central features are more central to the self-concept, changes to these features were more disruptive to identity. Causal centrality and disruption to identity were positively correlated,  $r_s = .86$ ,  $n = 16$ ,  $p < .01$ . This result was not simply an artifact of averaging over subjects. Individual-level analysis of the correlation between causal centrality and disruption to identity revealed that the average correlation coefficient was significantly greater than 0 ( $M = .33$ ),  $t(78) = 7.4$ ,  $p < .01$ .

Study 2 extended our investigation to judgments about the identity of others. Subjects read vignettes that described causal stories about how people came to have three salient characteristics of their identity—one being the cause of the other two (e.g., *Jack's shyness caused his memories of being a lonely child and a preference for solitary activities*). Subjects then choose which of two individuals was more likely to be the character in the vignette. Each was missing one feature. According to our causal centrality account of identity, subjects should be more likely to pick the individual missing the effect feature (e.g., does not have memories) rather than the cause feature (e.g., is not shy) because the cause is linked to two other features while the effect is only linked to one. Two versions of each vignette were developed so that a given feature was the *cause* for half of subjects and the *effect* for the other half (e.g., *Jack's memories of being a lonely child caused him to be shy and have a preference for solitary activities*). Consistent with predictions, subjects were significantly more likely than chance ( $M = 68\%$ ) to pick the individual missing an effect feature,  $t(57) = 6.0$ ,  $p < .01$ . Thus, the exact same feature was perceived as being more or less important to identity depending on its causal relationships.

Finally, Study 3 uses a similar paradigm to pit our account of causal centrality with another theoretical account of how causal information influences conceptual centrality, the dependency model (Sloman et al., 1998). The dependency model suggests that causal depth that determines which features are most central (i.e., causes are more central than their effects). The results suggest that the number of causal links a feature participates in is more important to identity judgments than the causal depth of a feature.

Overall, the results suggest that beliefs about the causal structure of the self-concept play a key role in consumers' identity judgments of themselves and others. As disruption to identity is linked to greater discounting of future rewards, these results suggest that specifically preserving causally central features of identity may promote future-oriented consumer decisions. In addition, as purchases that are more important to the self-concept are associated with greater happiness and satisfaction (Carter & Gilovich, 2012), these results suggest that those that are perceived as more causally linked to other features of the self will lead to the most satisfaction.

For more information contact: [stephanie.chen@chicagobooth.edu](mailto:stephanie.chen@chicagobooth.edu)

## ***Individual Papers: New insights on consumer influence in advertising and retailing***

### ***Do Larger Serving Sizes Lead to Larger Servings? The Effects of Increasing Serving Size on Health Perceptions and Consumption***

Chris Hydock, Georgetown University, USA\*

Anne Wilson, Georgetown University, USA

Karthik Easwar, Georgetown University, USA

The Food and Drug Administration recently proposed a plan to update the Nutrition Facts Panels (NFPs) required on packaged foods. One of the modifications would include increasing serving sizes to more accurately reflect typical consumption. This research examines the impact the change may have on consumers.

Serving sizes are intended to reflect the amount of food people actually eat (fda.gov). However, current quantities are based on data collected in the 1970's and 1980s. This is problematic because average consumption amounts have increased since the introduction of NFPs (Schwartz and Byrd-Bredbenner 2006; Young and Nestle 2002). The serving size listed on foods is important because consumers frequently rely on the raw numbers presented on labels and often fail to calculate the "true" nutrient content of foods based on personal portions. This may stem from confusion regarding serving sizes (Seiders and Petty 2004) and consumers' inability, or insufficient motivation, to complete the mental math needed to properly interpret nutritional information (Cowburn and Stockley 2004; Roberto and Khandpur 2014; Rothman et al. 2006).

Past research on serving sizes and nutrition labels has provided mixed results. Mohr, Lichtenstein, and Janiszewski (2012) found that smaller serving sizes, relative to larger serving sizes, increased unhealthy consumption by decreasing guilt. Meanwhile, Dallas, Liu and Ubel (2015) found that larger serving sizes actually increased consumption. It thus remains unclear whether larger serving sizes will serve as an anchor for portioning, subsequently increasing consumption, or whether they will make foods appear less healthy (and increase consumption guilt), thus decreasing consumption.

The current research sheds light on how increasing serving sizes could influence consumer perceptions and consumption. Study 1 examines the effect of serving sizes on perceptions of food health as well as how accurately serving sizes reflect actual consumption. Study 2 considers the influence of serving sizes on estimates of caloric consumption and anticipated consumption guilt. Study 3 manipulates the serving size presented with foods and measures actual consumption.

In study 1, consumers were presented with one of five food packages (Red Baron Frozen Pizza, Barilla Penne Pasta, Froot Loops Cereal, Kraft Sliced Swiss Cheese, or Applegate Farms Sliced Hams) and an accompanying NFP. The NFP depicted either the current serving size or a larger serving size (2x current), and the corresponding nutrition information. The magnitude of the larger serving size was determined by a pretest, which indicated that the median amount of each food item consumers reported consuming in a typical sitting was two times the current serving size. After viewing the label, consumers were asked how healthy they thought the food was and how accurately they thought the serving size represented their typical consumption.

The results of study 1 indicated a significant effect of larger serving sizes on perceived health. This is important because it is likely that consumers may decrease consumption if they view foods as less healthy. Further, the results suggest that increased serving sizes more accurately reflect average consumption patterns, which may help consumers more quickly evaluate nutritional content of foods without needing to do mental math.

In study 2, consumers viewed one of six food packages (Kraft Mac and Cheese, Campbell's Chunky Chili, Stouffer's Lasagna, Rice Chex, Gorton's Grilled Fillets and Pacific Creamy Tomato Soup) and the corresponding NFP. Again, consumers were either presented with labels depicting current serving sizes or larger serving sizes twice the current amount. After viewing the label, participants virtually portioned out what they would eat in a single sitting by clicking on the food package to indicate the amount of that item they would consume. Participants were then asked to rate how healthy they thought the food was, to estimate the number of calories they thought they portioned out, and to indicate how guilty they would feel consuming the food.

The results of study 2 replicated those of study 1; a significant effect of larger serving sizes on consumers' perceptions of healthiness of food items. There was no effect of serving size on the volume of food consumers portioned out. However, consumers exposed to the larger serving sizes estimated that the amount of food they portioned out contained a greater number of calories. Consumers also reported more anticipated guilt if they were to eat a food presented with the large serving size nutrition label relative to the current serving size label. The results show that serving size impacts not only perceptions of foods' health, but consumers' estimates of caloric intake and anticipated guilt.

In study 3, participants included undergraduate students who had signed up to complete a collection of research surveys. At the start of the session, participants were told that, in addition to course credit, they would receive M&M's as a thank you for their participation. Students were presented with a copy of the NFP for M&Ms (either depicting the current or larger serving size) and asked to verify that they were not allergic to any ingredients. Upon confirming no allergies or health risks, participants were given a pre-weighed (125g) bowl of M&Ms. At the end of the session (50 minutes) the bowls were collected and weighed to assess the volume of M&Ms consumed.

Consumers who were given the NFP depicting larger serving sizes ate significantly fewer M&Ms than those who were presented with labels portraying the current serving size. This finding is consistent with the results of the previous studies indicating that larger serving sizes leads consumers to view foods as less healthy.

Overall, the three studies conducted here support the FDA's proposal to require more realistic serving sizes on packaged foods. This research demonstrates that increasing serving sizes will have the positive intended effect of decreasing consumption either directly or via reducing perceptions of health and increasing calorie estimates which in turn will decrease consumption. Applied more generally, the findings suggest that updating serving sizes on nutrition labels could help promote better dietary choices and help curb the obesity epidemic in the United States.

For more information contact: [ch937@georgetown.edu](mailto:ch937@georgetown.edu)

### ***Scarcity Backfires: When Scarcity Leads to Harder Decision***

Yuechen Wu, University of Maryland, USA\*

Meng Zhu, Johns Hopkins University, USA

Rebecca Ratner, University of Maryland, USA

"Scarcity Marketing" is widely used by marketers to promote sales. For example, "Hurry, while stocks last" campaigns are commonly seen in both online and offline sales promotions; popular travel sites such as "booking.com" display the limited number of rooms left for hotels, so customers will have to hurry. In fact, a rich body of research on scarcity has found that object-specific scarcity boosts the valuation and preference for the particular item and thus increases sales (e.g. Gierl and Huettl 2010; Inman, Peter, and Raghurir 1997). The overall perception of scarcity has also been found to impact consumers' evaluation of products in a choice set by polarizing their preference, and in turn increase choice share of the most-preferred item from a product class (Zhu and Ratner 2015).

Though the current market is flooded with scarcity marketing techniques, to our knowledge no studies has directly studied scarcity's effect on consumers' perceived decision difficulty and satisfaction during decision making process. Are there conditions where scarcity, by interfering with the distribution of consumers' preference for products in a choice set, backfires and leads to harder and unsatisfying decisions? Will today's consumers be more likely to fall victim of "decision quicksand" (Sela and Berger 2011) in the face of ubiquitous scarcity marketing techniques?

In this research, we propose that when people are choosing between options for which they have **close initial preferences**, scarcity will increase perceived decision difficulty and decrease decision satisfaction by the process of **preference convergence**. Scarcity has been found to alter consumers' preference distribution for options in a choice set by polarizing their liking towards the favorite items (Zhu and Ratner 2015) or elevating preference for the scarce item (Brock 1968; Verhallen and Robben 1994). We hypothesize that whether or not scarcity will lead to preference polarization versus preference convergence will depend on the size of the initial preference gap. Specifically, we predict that when the initial preference gap is small, scarcity leads to a convergence (rather than polarization) of preferences between the items. The shrunk preference gap (i.e. "preference convergence") resulted from scarcity then elevates decision difficulty, decreases decision satisfaction, and backfires on consumers' effective decision making process. In this case, marketers may even be hurt by the use of scarcity marketing techniques.

We also explore the underlying process from scarcity tactics to consumers' preference convergence. Extant literatures have shown that scarcity heightens arousal which in turn induces an attention-narrowing process, leading to a smaller window of selected information surrounding the point of focus (Eysenck 1982). As a result, evaluation is mostly based on the primary attribute of the options while the secondary dimensions are discarded (Paulhus and Lim 1994). Building upon previous literature, we theorize that consumers aroused by scarcity tend to selectively process cues and pay more attention to the primary attribute to differentiate between alternatives in the choice set. The incapability of expanding attention to other attributes and the disproportionate attention allocation on primary vs. secondary attributes consequently converges consumers' preferences when the size of the initial preference gap is small (vs. large).

Study 1 supports our basic idea that scarcity leads to harder and unsatisfying decisions when the initial preference gap for options is small. Participants were asked to choose between two equally attractive pizza restaurants, and then were told that when they logged into *opentable.com* to check the availability of the restaurants, only two (scarcity) or seven (abundance) out of seven time slots for both restaurants are available. As expected, participants choosing between options with small initial preference gap found the decision harder and less satisfying when the availability of restaurants is scarce (vs. abundant).

In study 2, we employed an incentive-compatible test to unveil how scarcity backfires: when initial preferences for options are close, scarcity leads to preference convergence which then results in higher decision difficulty and lower decision satisfaction. Participants were presented with four pairs of gift cards with four different levels of initial preference gaps. Each pair of gift cards was customized for each participant based on their initial likings towards gift cards from eight different apparel retailers. Participants were told only a few (scarcity) or many (abundance) gift cards from each store are remaining. After choosing a gift card from each of the four pairs, participants were asked to rate their likings towards the gift cards again. The results show that: first, compared to abundance, scarcity leads to preference polarization when the initial preference gap is large, which is consistent with previous findings (Zhu and Ratner 2015); more importantly, however, we find that with the initial preference gap declining, preference polarization attenuates and ultimately reversed. As preference convergence emerges, consumers experience higher difficulty and lower satisfaction when making the decision.

Study 3 aims to test our theory that consumers aroused by scarcity narrow their attention to the primary attribute of options when making choices. Participants were asked to imagine that they were looking for a new apartment and had narrowed down to two options. After the scarcity manipulation, participants were informed that they had access to information of the two apartments on two attributes and they could check on the information only when they hover their mouse on the attribute of interest. As predicted, we find consumers under the constraint of scarcity devoted a larger share of their time checking on information of the primary (vs. secondary) attribute.

Study 4 further examines the attention-narrowing process, demonstrating that preference convergence triggered by scarcity can be attenuated by experimentally expanding participants' attention on other attributes. Attention expansion was manipulated by presenting

the participants with unrelated examples of how people compare multiple attributes to make a decision. Adopting similar protocol of study 2, participants were presented with two customized pairs of gift cards with large and small initial preference gaps. Results show that when participants are primed to allocate their attention more evenly on primary vs. secondary attributes when making choices, preference convergence effect attenuates, which in turn leads to lower decision difficulty.

To summarize, we find the situation in which the scarcity backfires on consumers by increasing decision difficulty and decreasing decision satisfaction. Process evidence show that scarcity triggers selective attention on primary attribute, which then leads to preference convergence when consumers' initial preference gap for options is small (vs. large).

For more information contact: yuechenw@rhsmith.umd.edu

***The Product-to-Space Ratio Effect: How Space Influences Product Aesthetic Appeal, Store Perceptions, and Product Preference***

Julio Sevilla, University of Georgia, USA\*

Claudia Townsend, University of Miami, USA

A consumer enters an unfamiliar store and immediately senses that the merchandise is of high value. We hypothesize that such a reaction is, at least in part, influenced by the store display's "product-to-space ratio" - how much space is dedicated to the presentation of each item. In this research, we demonstrate that retailers that allocate more space to the presentation of an assortment benefit from positive effects on product valuation, purchase, and even perceived product experience (taste).

We propose two processes behind this effect. First, is an inferred-based effect whereby consumers deduce that a store using a large amount of space to exhibit products must have a prestigious image and carry high-priced items in order to afford the rental costs necessary for such a display. Indeed, other factors that influence retailer costs such as parking lot size (Brown and Oxenfeldt 1972) or return policies (Anderson, Hansen, and Simester 2009) have been shown to influence store price image. Formally:

H1: Holding all else constant, presenting products in a lower product-to-space ratio (more space) will increase consumer perceptions of store prestige.

Second is a more automatic process. Bloch (1995) suggested that when faced with a display of products, the first response consumers have is that of aesthetic appreciation for the items. Aesthetic response is automatic, fast, and enduring (Bloch 1995; Leder et al. 2004; Veryzer and Hutchinson 1998). In a retail environment aesthetic response generally occurs before any other dimensions of the products or the store are evaluated. Aesthetic response refers to the pleasure that results from sensory perception (Hekkert 2006) and is influenced by any aspect that impacts perception (Hekkert and Leder 2008) including situational factors (Kirk 2008). This often occurs without the viewer's awareness (Albright and Stoner 2002). When something is more perceptually fluent (Reber, Schwarz, and Winkielman 2004) or easier to delineate from the visual field (Marr 1981; Ramachandran 1990), it is seen as more beautiful. Thus, environmental factors that facilitate the recognition of a stimulus or increase its delineation from the background ought to enhance aesthetic response. We propose that additional space around an object creates this effect; more space allows the viewer to isolate an object and recognize it as distinct from its environment, thus making the processing of it more enjoyable. Specifically:

H2: Holding all else constant, presenting products in a lower product-to-space ratio (more space) will increase consumer perceptions of how aesthetically pleasing the products are.

We also predict these two effects will influence product perception and related-behavior:

H3A: Holding all else constant, presenting products in a lower product-to-space ratio (more space) will increase consumer perceptions of product value and purchase likelihood.

H3B: This effect will be mediated by perceptions of store prestige and product aesthetics.

To examine these hypotheses, we ran five experiments – two in the field and three in the laboratory. The first study was a field study where, holding product assortment constant, the vendor varied the size of the display. Consumers in the low product-to-space ratio (more space) condition were more likely to purchase than those in the high product-to-space ratio condition ( $M_{\text{low ratio}} = 26.7\%$  vs.  $M_{\text{high ratio}} = 13.5\%$ ;  $\chi^2 = 2.33, p < .02$ ). While there was no difference in the amount of money spent among consumers that made a purchase ( $M_{\text{low ratio}} = \$25.20, SD = \$6.29$  vs.  $M_{\text{high ratio}} = \$27.10, SD = \$6.17$ ;  $t(36) < 1, n.s.$ ), the average amount spent per customer who visited the retailer was higher in the small product-to-space ratio condition than in the large ( $M_{\text{low ratio}} = \$6.73, SD = \$11.65$  vs.  $M_{\text{high ratio}} = \$3.67, SD = \$9.57$ ;  $t(195) = 2.03, p < .05$ ). Additionally, a follow-up study of all shoppers revealed they reported more favorable product evaluations in the low than high product-to-space ratio condition ( $M_{\text{low ratio}} = 5.27, SD = 1.16$ ;  $M_{\text{high ratio}} = 4.73, SD = 1.09$ ;  $t(84) = 2.23, p < .03$ )

In study 2 we presented 138 Mturk participants with images of displays of either neckties or women's shoes in either a high or low product-to-space ratio. Participants estimated higher prices in the low product-to-space ratio condition ( $M_{\text{low-ratio}} = \$29.87, SD = \$23.73$  vs.  $M_{\text{high-ratio}} = \$18.59, SD = \$15.64$ ;  $F(1, 134) = 8.18, p = .005$ ). Additionally product-to-space ratio influenced perceptions of both store prestige ( $M_{\text{low-ratio}} = 6.91, SD = 1.69$  vs.  $M_{\text{high-ratio}} = 6.00, SD = 1.47$ ;  $t(136) = 3.37, p = .001$ ) and product aesthetics ( $M_{\text{low ratio}} = 7.38, SD = 1.38$  vs.  $M_{\text{high ratio}} = 6.85, SD = 1.27$ ;  $t(136) = 3.08, p < .01$ ), both in the predicted direction. We tested the mediating role of these two factors on price estimations using model 4 (Hayes 2013) and found that both simultaneously mediated the effect of space on price estimates.

Studies 3 and 4 then considered moderators of the store prestige pathway of the product-to-space ratio effect. In study 3 we presented either a hedonic product (body cream) or a utilitarian one (analgesic balm) to 512 Mturk participants in either a large or small product-to-space-ratio. We also varied the presence or absence of a cognitively loading task. Without mental resources to deliberate we found the effect via store prestige dissipated while the automatic effect via product aesthetics remained. Study 3 also revealed the robustness of the effect – that it occurred across hedonic and utilitarian product categories. Then in study 4 we used a student sample ( $N=401$ ) to consider how information about product and store quality via brand name influence the effect. We considered one high-end brand (Tiffany & Co.) and one low-end brand (Forever 21). Results revealed brand information can override the more deliberative effect via store prestige but not the automatic effect via product aesthetics. Finally study 5, a field study with 166 participants, showed that the effect extends to product experience, as we found that chocolates presented in a lower product-to-space ratio were rated as tastier ( $M_{\text{low ratio}} = 6.62, SD = 1.60$  vs.  $M_{\text{high ratio}} = 6.00, SD = 2.06$ ;  $F(1, 167) = 4.60, p = .03$ ).

For more information contact: ctownsend@bus.miami.edu

### ***The Effectiveness of Visual Metaphors in Advertising***

Yixia Sun, Ph.D Candidate, The Chinese University of Hong Kong\*

Robert S. Wyer, The Chinese University of Hong Kong

Though abundant research has considered visual information to be more vivid and straight forward than verbal information, its use in advertisement design is often indirect (McQuarrie & Mick, 1996). *Visual Metaphor* as an indirect claim is most frequently used in ads to convey a particular attribute of the product being promoted. To comprehend a visual metaphor, recipients must firstly infer the attribute being conveyed from the metaphor part and then transfer it to the product (Sopory & Dillard, 2002). For example, in the metaphor “the pen is a camel,” the attribute “endurance” can be inferred from the camel and subsequently transferred to the pen.

However, identifying the implications of indirect claim can be difficult. On one hand, the inference process requires cognitive effort. Consumers may not be motivated to expend the additional effort required to construe their implications (Anand & Sternthal, 1989). On the other hand, even if they are willing to expend the effort, a reasonable inference might not be made because the presence of a visual metaphor can also invite alternative inferences that are not intended by the ad (McQuarrie & Phillips, 2005). These alternative inferences, once generated, might interfere with the comprehension of the target attribute. And this is usually occurred when the target is intangible, abstract, or otherwise susceptible to multiple interpretations (Phillips & McQuarrie, 2009). Consequently, the effectiveness of the metaphor is likely to be undermined (Roehm & Sternthal, 2001).

To test the boundaries for visual metaphor to have an effect, this paper considered both tangible and intangible attributes. First, when the attribute being conveyed is *visual*, which can be directly seen from a picture of the product (e.g., “colorful”, “thin”, “beautiful” etc.), we assume that the presence of a visual metaphor would be redundant for comprehension of such attribute. For example, the presence of a poker card may have no effect in facilitating the comprehension that “a cellphone is thin”, since this attribute is self-evident from the product picture (Appendix, Figure 1). Second, when the attribute being conveyed is not visual but still sensory (*non-visual sensory* attributes such as olfactory, tactile, etc.), the presence of a visual metaphor is assumed to be effective in facilitating comprehension of such attributes for the reason of cross-modal interactions (Morrot et al. 2001; Delwiche, 2004; Streri & Pêcheux, 1986). For example, the presence of a floating leaf can facilitate the perception of lightness which is subsequently transferred to the product (Figure 2). Finally, in still other cases, the attribute being conveyed may be *conceptual*. Conceptual attributes are abstract and intangible. They are not easily perceived by sensory organs but have to be inferred through cognitive effort (e.g. “multifunctional”, “energy saving”, “intelligent” etc.). We therefore assume that the presence of a visual metaphor is less effective in conveying conceptual attributes, and a verbal cue may be necessary for comprehension of such attributes (Figure 3).

Moreover, for the ineffectiveness of visual metaphor in conveying *conceptual* attributes, we further assume that although the vividness of visual metaphor could facilitate the comprehension of the target attribute, it may also result in the failure of reducing alternative inferences. When the target attribute is abstract and intangible, these alternative inferences can be easier to come to mind than the target attribute, thereby would interfere with the identification of the target attribute. Across four studies, we tested the situations for visual metaphor to have an effect and more importantly explained the underlying mechanisms.

Study 1 tested the three hypotheses under directed processing (i.e., when participants were explicitly told to process the ad). Results revealed a significant three-way interaction of visual metaphor (present vs. absent), verbal cue (present vs. absent) and three types of attributes (visual, non-visual sensory, and conceptual) on the proportion of participants who correctly understood the target attribute ( $Wald(11) = 103.09, p < .001$ ). As predicted, the presence of a visual metaphor was redundant in conveying *visual* attributes but was effective in conveying *non-visual sensory* attributes. Though the presence of visual metaphor facilitated understanding of *conceptual* attributes to some extent, its comprehension mainly relied on a verbal cue that directly referred to the attribute (Table 1).

Study 2 further tested the three hypotheses under incidental processing (i.e., when ads were incidentally encountered). To simulate the natural context, we inserted the target ads into an E-magazine. Participants were asked to flip the magazine as they usually do and then were asked to recall as many ads as possible as well as the target attribute being conveyed by the ad. We got similar results as that in study 1 except that visual metaphor combined with verbal cue to have an effect on comprehension of *non-visual sensory* attribute and

*conceptual* attribute. Even so, the overall proportion of participants who correctly understood conceptual attributes was generally low (Table 2). These findings contrast with those obtained in study 1, implying that when participants scan a magazine without any a priori goal of thinking about the ads contained in it, they are less likely to pay attention to verbal information unless a visual metaphor is present. At the same time, they are less likely to elaborate the implications of the visual metaphor unless verbal information is available that facilitates its comprehension.

Study 3 and 4 focused on *conceptual* attributes only and tried to explain why visual metaphor is less effective in conveying such attributes. To achieve this, we tested effects of visual metaphor on inference of alternative attributes. We assumed that when the attribute being conveyed was conceptual, the vividness of visual metaphor would facilitate comprehension of the target attribute but would also lead to the failure of reducing alternative inferences which consequently interfered with the comprehension of the target attribute. Verbal metaphor, however, may be more effective in inhibiting alternative inferences because of its lack of vividness, but it was also less effective in highlighting the target attribute. Study 3 therefore compared visual metaphor with its corresponding verbal metaphor and provided evidence for this assumption. Specifically, results suggested that (a) visual metaphor increased the probability of identifying the target attribute but had no impact on reducing the likelihood ratings of alternative attributes. This helped explain the ineffectiveness of visual metaphors in conveying conceptual attributes; (b) verbal metaphor significantly reduced the likelihood rating of alternative attributes. However, the probability of identifying the target attribute in the verbal metaphor condition was lower than that in the visual metaphor condition (Table 3). The latter result implied that when the target attribute was conceptual, visual metaphor had a direct effect on persons' identification of the target attribute. To the extent that verbal metaphors had an effect, however, their influence may be indirect, by decreasing inferences of other attributes that the product might have and leading persons to infer the target attribute by default.

To further test the implications of study 3, study 4 measured participants' response latencies to the target attribute. Results revealed that participants responded significantly faster when a visual metaphor was present than when it was absent. This effect, however, was not found for verbal metaphor (Table 4). Therefore, visual metaphor directly increased the accessibility of the target attribute when the ad was encountered, whereas verbal metaphor's effect might be indirect and occurred later on when making judgments.

For more information contact: [yixia@baf.msmaail.cuhk.edu.hk](mailto:yixia@baf.msmaail.cuhk.edu.hk)

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