Dealing With Uncertainty Through Haptic Sensations

Femke van Horen, University of Cologne, Germany
Thomas Mussweiler, University of Cologne, Germany

Uncertainty (e.g., due to financial scarcity) is central in human life. We demonstrate that, when feeling uncertain, consumers seek comfort through haptic sensations, choosing products with softer as compared to harder properties. Additionally, we show that softness is functional as it restores consumers’ feelings of certainty.

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The Best of Times, The Worst of Times: 
How Resource Abundance and Scarcity Shape Consumer Behavior

Chairs: Eugene M. Caruso, University of Chicago, USA 
Nicole L. Mead, Erasmus University, The Netherlands

Paper #1: Do the Worst of Times Increase Creativity?: Scarcity vs. Abundance Psychology and Creativity
Ravi Mehta, University of Illinois at Urbana Champaign, USA 
Meng Zhu, The Johns Hopkins Carey Business School, USA

Paper #2: Dealing with Uncertainty Through Haptic Sensations
Femke van Horen, University of Cologne, Germany 
Thomas Mussweiler, University of Cologne, Germany

Paper #3: Perceived Resource Scarcity Reduces Trust among Men but Increases Trust among Women
Nicole L. Mead, Erasmus University, The Netherlands 
Evan Weingarten, University of Chicago, USA 
Eugene M. Caruso, University of Chicago, USA

Paper #4: Mental Accounting in the Context of Poverty
Crystal Hall, University of Washington, USA 
Eldar Shafir, Princeton University, USA

SESSION OVERVIEW
In order to survive, consumers depend on a several key resources, including food and money. Yet in any given day, these resources can be seen as threatened (e.g., short-term financial crisis) or experienced as lacking (e.g., chronic poverty). Despite the centrality of resources in daily life, only little research has investigated how actual or perceived scarcity can shape consumer mindsets, product preferences, and daily decisions, such as tradeoffs between time and money. The proposed session aims to highlight the newest research from around the globe that tackles these questions and more using a diverse range of methods, population samples, and measures. Broadly, the first two papers examine how resource scarcity (compared to resource abundance) affects consumers’ mindsets and product preferences, whereas the final two papers examine resource scarcity among different populations. Specifically, Mehta will begin by showing that resource scarcity changes the way that people approach problems in a way that leads them to think outside the box, thereby heightening consumer creativity. Van Horen will continue by examining how consumers use products with specific haptic sensations to restore a sense of comfort when resources are perceived as uncertain. Mead will then focus on how scarcity affects monetary trust decisions, showing that scarcity differentially impacts men and women’s trust. Hall will close the session by demonstrating and discussing how and why low-income consumers differ in everyday financial decisions from high-income consumers. Taken together, the diverse approaches, methods, and populations represented in the four papers provide a broad yet deep view into emerging research on the implications of resource scarcity and abundance for consumer behavior. Particularly in the current climate of economic and political uncertainty, the novelty of the topic and diversity of the research will surely draw a large audience and stimulate a lively dialogue among these researchers.

Do the Worst of Times Increase Creativity?: 
Scarcity vs. Abundance Psychology and Creativity

EXTENDED ABSTRACT
The face of human society is constantly changing. As humans moved into the late modern era as an industrialized society, consumerism and over-acquisition of resources started to become the way of living (Côté 1993, 1996; Riesman 1950). Abundance started to supplant scarcity, especially in first world societies. Simultaneously, creativity has taken on a relatively more central and important role in consumption environments. On the demand side of the equation, consumers engage in everyday creative behavior such as home décor and fashion (Burroughs and Mick 2004; Burroughs, Moreau and Mick 2008). On the supply side of the equation, many businesses thrive on consumers’ ability and desire to be creative.

One question that arises, then, is whether and how perceived availability of resources affects creativity in consumption environments. Or more specifically, how might a scarcity (vs. abundance) mindset influence consumers’ creativity? In the current work, we conceptualize scarcity as the perception of an insufficient supply of resources, and abundance as the perception of an excessive supply of resources (Zhu and Kalra 2012). Past research has shown that the existence of constraints induces novel problem solving (Moreau and Dahl 2005). That is, constraints make people move away from the path of least resistance (POLR), thereby increasing their creativity. Hence, we argue that perceptions of scarcity will cause consumers to approach problems from multiple perspectives. That is, when scarcity cues are salient, individuals will overcome functional fixedness (Ward, Smith, & Finke, 1999) and explore solutions more broadly, leading to heightened creativity. However, when abundance cues are salient, individuals may not have sufficient motivation to move away from the POLR. Thus, among abundance participants, we predict a higher degree of functional fixedness, narrower exploration of solutions, and relatively lower creativity.

Experiment 1 tested our basic hypothesis that inducing a scarcity (vs. abundance) mindset will lead to higher creativity. To manipulate mindset, we had some participants write a paragraph about “Growing up in a society with scarce resources” (scarce condition), and other participants write a paragraph about “Growing up in a society with abundant resources” (abundance condition). Then all participants were presented with 10 Remote Associate Test items; their responses were assessed as a measure of creativity (Mednick 1962). As expected, participants primed with abundance cues demonstrated lower creativity as compared to participants primed with scarcity cues and participants in the control condition.

In experiment 2, we examined the mechanism through which perceived resource availability affected creativity. Specifically, we assessed whether abundance (vs. scarcity) mindset led to lower creativity because it increased functional fixedness. To induce perceptions of abundance and scarcity, we used the same manipulation used in experiment 1. All participants were then asked to generate creative uses of a brick (Friedman and Forster 2001). To assess the creativity of the uses generated, a panel of 12 judges rated the creativity of participants’ responses. A second independent panel of 12 judges rated each of the uses on functional fixedness (i.e., how different the idea
was from the usual use of a brick). As predicted, uses for the brick generated by scarcity participants were judged to be more creative as compared to those generated by abundance participants. Also, we observed that functional fixedness mediated the effect, such that a scarcity mindset led to lower functional fixedness, which in turn led to more creative uses for the brick.

Experiment 3 provided further support for functional fixedness as the underlying mechanism. In this experiment, we manipulated functional fixedness salience in addition to manipulating perceived resource scarcity. To manipulate functional fixedness, participants were asked to generate ideas for a new kind of a computer keyboard. Those in the functional fixedness salient condition were told specifically to generate ideas for a new type of a “computer keyboard (the one you are using to type now),” whereas those in the control condition were simply asked to generate ideas for a new type of “computer keyboard.” A two-way analysis of variance (ANOVA) revealed an interaction between functional fixedness and scarcity. Participants in the control condition demonstrated the same pattern of results observed in experiments 1 and 2: an abundance (vs. scarcity) mindset lowered creativity. However, when functional fixedness was induced experimentally, the effect disappeared: creativity did not differ between abundance and scarcity participants.

In summary, three experiments indicate perceived availability of resources has important consequences for consumer creativity and problem solving. Whereas a scarcity mindset induces the psychological processes necessary to stimulate creativity, an abundance mindset causes people to engage in a narrow exploration of solutions, thereby impairing creativity. Implications for consumer behavior and managerial practices will be discussed.

Dealing with Uncertainty Through Haptic Sensations

EXTENDED ABSTRACT

How do consumers adapt to a world that is fundamentally uncertain? For example, how do consumers react and cope with the prospect of financial scarcity during a financial crisis or after job loss? Or, how do consumers respond to profound shifts in a country’s political climate?

Much research has focused on uncertainty regarding people’s preferences or choices, which may be reduced by active information search (Kohn-Berning and Jacoby 1974; Urbany, Dickson, and Wilkie 1989). Uncertainty, however, is often externally rather than internally imposed (Kahneman and Tversky 1982). Uncertainty is thus a characteristic inherent in the environment and hence out of people’s control, making it nearly impossible to reduce uncertainty by simply searching for information (Smithson 2008). Some research has suggested that people combat such external uncertainty by reestablishing a sense of order and structure, for instance through perceiving meaningful patterns among random stimuli (Whitson and Galinsky 2008) or by increasing faith in governmental institutions or in God (Kay, Gaucher, Napier, Callan, and Laurin 2008). In the current work, we suggest that people may deal with such uncertainty on a more basic experiential level — through seeking specific haptic sensations.

Touch is the first sense to develop and is critical in understanding and dealing with the world. Early haptic sensations importantly shape our memories and drive our future behavior (Gallace and Spence 2010). Interpersonal touch forms the foundation for beliefs about caring and comfort. Research shows that such learned beliefs can affect our behavior. For instance, in one study a simple pat on the back increased people’s sense of security and led them to make riskier financial decisions (Levav and Argo 2010). Even touching non-personal objects, such as a teddy bear, influenced people’s behavior and affective experiences by making them act more prosocially after social exclusion (Tai, Zheng, and Narayanan 2011) or by reducing their negative mood (King and Janiszewski 2011).

As touch is associated with comfort, we hypothesize that simply touching, holding, or feeling something soft may be an effective way to deal with uncertainty. More specifically, we propose that, when feeling uncertain, consumers will seek such haptic sensations and choose products with softer as compared to harder properties. In addition, we predict that softness is functional and that it reduces feelings of uncertainty. Three experimental studies tested these hypotheses.

In experiment 1, participants read and wrote about life events that were characterized by either high levels of uncertainty (e.g., financial scarcity, job loss) or high levels of certainty (e.g., financial stability, good health services). Subsequently, participants unobtrusively experienced softness by drawing two pictures with two pens – one with a soft-grip and one with a hard-grip (counterbalanced). As a token of appreciation, participants were then asked to choose one of these pens. The results showed that participants who had earlier read about certainty were no more likely to choose the soft or hard pen (18, 18). Uncertain consumers, however, chose the soft-grip pen more often (27) than the hard-grip pen (9). There were no differences in mood between conditions. Hence, the effect of certainty on preference for softness cannot be attributed to mood.

In experiment 2, we conceptually replicated the results of experiment 1 using a different behavioral measure – namely, the choice between a hard and soft sweet. Additionally, we incentivized choice of the hard candy by making the hard candy more attractive than the soft one. (Pre-test results confirmed that the hard candy was indeed more attractive than the soft candy.) Thus, not surprisingly, certain participants chose the soft candy much less often (2) than the hard candy (21). Uncertain participants, however, chose the soft candy about as often (9) as the hard candy (11). Thus, across two experiments, uncertain consumers deviated from certain consumers by switching towards a softer commodity.

In the last experiment, we demonstrate that consumers do not only deal with uncertainty through touching something soft, but that softness also has the capability to restore certainty. After uncertainty/certainty was induced, participants were asked to write down the objects they believed were hidden in a Snowy Picture Task (SPT, Ekstrom, French, Harman, and Dermen 1976) while writing either with a soft-grip pen or with a hard-grip pen. Importantly, for each object they were asked to indicate how uncertain/certain they felt about their answers. In addition, participants were asked right after the manipulation (time point 1) and right after the SPT (time point 2) how uncertain/certain they felt at the time. As expected, uncertain consumers felt more certain about their answers on the SPT after writing with a soft-grip pen than after writing with a hard-grip pen, whereas there were no differences between conditions for certain consumers. Furthermore, uncertain consumers felt, as predicted, more certain at time point 2 than at time point 1 after using a pen with a soft-grip, whereas using a pen with a hard-grip did not change feelings of uncertainty. For certain consumers, on the other hand, using a soft-grip pen induced uncertainty, whereas using a hard-grip pen kept their level of certainty equally high over time.

Across three experiments, using two different behavioral measures, results indicate that feelings of uncertainty induce a preference for soft products. Furthermore, we found that softness can mollify feelings of uncertainty. This finding indicates that, in the face of uncertainty (e.g., prospect of financial scarcity), solace can be found
and uncertainty can be reduced through the experience of soft haptic sensations.

**Perceived Resource Scarcity Reduces Trust among Men but Increases Trust among Women**

**EXTENDED ABSTRACT**

Trust plays a crucial role in both economic and social transactions (Fehr 2009). In this research, we examined whether merely altering people’s perception of available resources can affect their trust, and whether perceived resource scarcity has different effects among men and women. From an evolutionary perspective, times of resource scarcity should have differentially affected men and women. In particular, when resources were relatively scarce, competition for dominance might have increased among men (Daly and Wilson 1988), but attempts to affiliate with others for social support might have increased among women (Taylor 2002). We therefore predicted that perceived resource scarcity would decrease trust among men, but increase trust among women. We tested this prediction in two experiments by manipulating the amount of two separate resources (food and money) that participants felt were available to them and measuring their trusting attitudes and actual trusting behavior.

In experiment 1, forty-seven undergraduate students read a scenario in which they were asked to imagine traveling to a new country they had never visited before. We manipulated the perceived scarcity of food by telling some participants to imagine that, upon arriving in a small village, they discovered that it was a national holiday and all the stores and restaurants were closed until the next morning. They were further told that they only had a small amount of food with which they would have to last until the stores reopen in the morning. Participants in the abundance condition read the same story but were told that they had more than enough food in with them to last until the morning. As a manipulation check, we asked all participants the extent to which they felt they had enough food to last until the next day. This measure confirmed that participants in the scarcity condition reported having less than enough food to last them until the next day, relative to the abundance condition; the manipulation was equally successful for men and women (i.e., the interaction was not significant).

After reading this scenario, participants completed the Interpersonal Trust Scale (Rotter 1967), which is designed to measure an individual’s propensity to trust other people (e.g., “Most people can be counted on to do what they say they will do.”) A 2 (resources: scarcity vs. abundance) X 2 (gender: male vs. female) ANOVA on the Interpersonal Trust Scale revealed no main effects. However, there was a significant Resources X Gender interaction, whereby women in the scarcity condition trusted significantly more than women in the abundance condition, whereas men in the scarcity condition trusted relatively (but not significantly) less than men in the abundance condition.

In experiment 2, sixty-six undergraduate students participated in a “trust game” for real money (Berg, Dickhaut, and McCabe 1995). All participants played the role of sender, in which they had the option of keeping a €5 endowment for themselves (not trust) or sending it all to an anonymous partner (trust). If sent, the money would be quadrupled to €20 and the receiver then had the option of returning half the money to the sender or keeping it all for him/herself. We induced feelings of financial scarcity or abundance by changing the categories on a scale asking participants how much money they had in their checking and savings account, such that most respondents either placed themselves in the lowest (scarcity condition) or highest (abundance condition) category (for a similar manipulation, see Nelson and Morrison 2005). We then measured their decision to trust and their beliefs about the trustworthiness of their partner.

While the mental accounting literature has contributed to the understanding of general consumer behavior, no work to date has examined these phenomena with respect to low-income consumers. In terms of simple, everyday decisions regarding buying and saving, low- and high-income decision makers make many of the same choices. Deciding whether to spend more time to save a certain amount of money is a common choice for both groups, but these choices might be more consequential for lower-income individuals. In addition, low-income individuals might be more focused on smaller amounts, amounts that may carry less meaning for those with greater incomes. Saving a modest amount on a pair of shoes might seem appealing to both groups, but the lack of a financial buffer experienced by low-income individuals might make them more sensitive to the absolute amount saved rather than the proportion of the total amount saved.

We hypothesize that low-income individuals might not replicate the traditional topological accounting pattern observed in previous experiments that examine the willingness to travel to save a fixed amount of money on either a large or a small purchase (Tversky and Kahneman 1981). Specifically, because they live in a context where modest sums of money matter more, low-income individuals may not be as sensitive to different proportional amounts to be saved. The scenarios presented represent reasonable choices that both groups may face, but the context of poverty may cause low-income individuals to be more sensitive to absolute amounts. Overall, the main goal is to argue that, for some mental accounting scenarios, generalizing from findings demonstrated with high-income groups does not accurately describe the behavior of low-income decision makers. Low-income individuals do not show the same pattern of preference for relative over absolute savings (for modest amounts), resulting in a different pattern of results than what has traditionally been described by the literature.

In these surveys, we show that low-income individuals do not replicate the traditional pattern of topical accounting results. Study 1 uses adapted versions of Tversky and Kahneman’s (1981) stimuli, examining willingness to travel to save money. Study 2 more rigorously extends this using a novel, within-subjects design which forces
participants to choose between saving scenarios. In study 3, explore the relationship between numeracy and these effects.

In Study 1, low-income participants did not replicate the usual findings consistent with a strong preference for proportional saving. High-income participants demonstrate the expected preference reversal, while low-income participants seem more concerned with the absolute amount in these cases. In Study 2, this finding is supported using a novel, within-subjects design. When asked to decide between two saving options, high-income participants prefer the savings option that reflects the greater proportion. When the amount saved is not identical, high-income participants still choose the greater proportion, even when it is a lower absolute amount. Low-income participants do not replicate this; instead, they appear to rely more on absolute values. These findings may suggest that low-income individuals are more sensitive to modest amounts; without the buffer enjoyed by individuals in a higher-income context, low-income individuals may be more sensitive to absolute amounts, even under similar types of choice scenarios. The third study examines the relationship between numeracy and willingness to save. Previous studies have shown that individuals higher in numeracy are more likely to show the preference for a higher amount of proportional savings. This study replicates this pattern for the high-income consumers, but does not hold for the low-income participants. Lower-class consumers show the same pattern as in the previous studies, regardless of their level of numeracy.

Across this set of studies, the results for high-income individuals are consistent with previous findings in the literature. Of greater interest are the responses by low-income individuals. The data suggest that, relative to the high-income respondents, low-income respondents are more sensitive to absolute savings. Low-income participants do not show a clear preference for saving the greater absolute amount. They appear to be influenced by smaller relative sums that generate greater proportional savings. In contrast, high-income individuals appear to focus on the absolute amount at these moderate levels of saving.