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

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Resource scarcity is a fundamental phenomenon yet, to date, our understanding of the psychological processes that scarcity activates has remained limited. We propose and show that activating the concept of scarcity induces individuals to adopt a more abstract mindset, which expands the boundaries of their conceptual categories.

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# Understanding Consumers' Perception of and Responses to Scarcity Cues

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## **Paper #1: The Product to Space Ratio Effect: How Store Density Influences Perceptions of Scarcity and Product Preference**

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## **Paper #2: Planning Under Paucity: Responses to Resource Scarcity Threats Depend on Childhood Environments**

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## **Paper #3: The Effects of Resource Scarcity on the Ideal Female Body Size**

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## **Paper #4: Understanding the Psychology of Scarcity: When Limited Resources Prompt Abstract Thinking**

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### **SESSION OVERVIEW**

Modern life is rife with inconsistencies in product and resource availability. Not only does the economy continue to be characterized by periods of recessions, but there is considerable inequality among people for access to products and resources. Consequently, how do consumers perceive and react to cues of scarcity in their everyday lives? Despite increasing interest in this research topic, there are still many open questions regarding the antecedents and consequences of scarcity. For example, it is unclear what environmental cues lead consumers to perceive resources as more or less scarce. Moreover, the influence scarcity exerts on consumers' cognition, judgment and behavior still remain vastly unexplored. This session provides a step forward in this direction by considering various ways in which scarcity shapes consumer behavior.

All four papers in this session provide new insights into how different cues of scarcity, from store atmospherics to news articles indicative of recession, influence consumers' cognitions and behaviors. Two of the papers also identify important person variables, such as childhood environments, that may affect people's responses to such cues.

The first paper, by Sevilla and Townsend, investigates how environmental cues influence perceptions of scarcity. Specifically, they demonstrate how the product-to-space ratio in a retail setting leads consumers to perceive products as more or less scarce. Results from three experiments suggest that consumers perceive products to be scarcer when they are surrounded by more empty space, holding the product assortment constant. In turn, scarcity perceptions translate into higher purchase intention and increased price estimates.

The second paper, by Mittal and Griskevicius, draw from Life History Theory to explore whether consumers' response to scarcity cues depends on their childhood environments. Specifically, the authors investigate how resource scarcity cues differentially influence financial planning. Across three experiments, the authors present evidence suggesting that consumers who grew up with relatively lower levels of family support value financial planning more less when exposed to resource scarcity cues.

The third paper, by Hill, DelPriore, Rodeheffer and Butterfield, also draw from Life History Theory to investigate how resource scarcity influences women's ideal body sizes. Three experiments demonstrate that exposure to scarcity cues leads women who experienced relatively stressful (benign) childhoods to prefer heavier (thinner) body sizes.

Finally, the fourth paper by Roux and Goldsmith explores how being exposed to scarcity-related cues influences people's level of processing. Specifically, they show that activating the concept of scarcity induces people to adopt an abstract (vs. concrete) mindset, which broadens one's consideration, thus leading them to categorize objects into fewer, more general, superordinate groups and to be more likely to include atypical exemplars into a given category.

Taken together, these four papers advance our understanding of how scarcity influences consumer behavior. Overall, this session offers a coherent set of innovative perspectives that enhance the breath of our knowledge in a growing area of research. We expect this session to appeal to a broad audience, including researchers interested in resource scarcity, store atmospherics, financial planning, family environments, physical appearance, and cognitive processing.

## **The Product to Space Ratio Effect: How Store Density Influences Perceptions of Scarcity and Product Preference**

### **EXTENDED ABSTRACT**

Past research has shown that consumers use cues in the retail environment when making inferences about the properties of a product (Zeithaml 1988). In this work, we investigate an important aspect of a store environment, product density, which is the amount of space devoted to a constant number of items. Despite the importance of this factor as a potential determinant of store and product perception, this component of the retail environment has been widely understudied. Unlike past research on store density, which has focused on human or overall crowding (e.g. Eroglu and Harrell 1986; Machleit et al. 1994; Machleit et al. 2000), the present research considers how varying the density of *products* affects consumer preferences towards them.

In our studies we keep the number and characteristics of a set of products constant and manipulate the amount of space devoted to their display. Our results systematically show that a lower product-to-space-ratio (more space per product) has a positive effect on product preference, valuation, and likelihood of purchase. These findings are consistent with research on the use of white space in advertising (Pracejus et al. 2006), which suggests that this visual trope is effective due to its socio-historical meaning. However in contrast, we show that the effect of product to space ratio in the retail environment is due to a less deliberative process, that of increased perceptions of product scarcity. Past research has shown that scarce products are highly desirable (Cialdini 2009; Inman, Peter and Raghubir 1997; Verhallen 1982), mostly because people believe that limited opportunities are more valuable (Cialdini 2009). In this work, we show support for this notion and document a new manner of manipulating perceptions of product scarcity in a retail place, through varying the amount of space surrounding each product. Moreover, we rule out alternative explanations for the effect based on perceptions of store messiness or consumer difficulty in observing product assortments

as well as address the automatic versus deliberative components of the phenomenon.

Study 1 was a field study that established our proposed effect revealing that consumers spent more money in the store when a constant product assortment was displayed across a larger rather than smaller amount of space ( $M_{large\ space} = 6.73$  vs.  $M_{small\ space} = 3.67$ ;  $t(195) = 2.24$ ,  $p < .04$ ). Moreover, a survey of store visitors revealed more favorable evaluations of products in the low product to space ratio condition ( $M_{large\ space} = 5.27$ ) than in the high product to space ratio group ( $M_{small\ space} = 4.73$ ;  $t(84) = 2.29$ ,  $p < .03$ ).

Study 2 used a laboratory controlled environment to provide evidence for the display density effect by asking participants to select a choice set from which to make a hypothetical purchase. Specifically, participants considered two sets of men's neckties that differed on the designs of the ties and on the product-to-space-ratio of the display. The display space and product design factors were counter-balanced and yet significantly more than half of participants selected the assortment with more space as the one from which they would prefer to purchase (59.1%,  $\chi = 6.32$ ,  $p < .02$ ), which they liked more (59.1%;  $\chi = 6.32$ ,  $p < .02$ ), found more attractive (61.1%;  $\chi = 8.00$ ,  $p < .01$ ) and more luxurious and exclusive (59.1%;  $\chi = 6.32$ ,  $p < .02$ ).

Study 3 considered the underlying mechanism behind this effect by examining potential mediators for the phenomenon. In contrast to study 1, study 2 used a between- rather within- subject design, used estimated price of the featured products rather than choice set selection as a dependent measure, and considered a female-centric product category, that of women's shoes, as opposed to men's neckties. As expected, participants in the larger space condition estimated the price of the shoes as higher than did those in the smaller space condition ( $M_{large} = \$97.51$  vs.  $M_{small} = \$70.20$ ;  $F(1, 97) = 6.61$ ,  $p < .02$ ). Moreover, both perceptions of scarcity associated with the store ( $M_{large} = 3.69$  vs.  $M_{small} = 2.98$ ;  $t(99) = 2.10$ ,  $p < .04$ , CI: 16.36 to -1.14) and with the product ( $M_{large} = 3.74$  vs.  $M_{small} = 1.22$ ;  $t(99) = 9.06$ ,  $p < .0001$ , CI: -38.63 to -1.01-) mediated the effect.

In a set-up similar to study 2, study 4 provided further support for the underlying scarcity mechanism revealing the effect to be deactivated when participants' beliefs about how scarce a product is are directly manipulated ( $\chi = 1.61$ ,  $p > .20$ ). Additionally, in this study we found that the effect held under conditions of cognitive load, which suggests predominantly automatic and non-deliberative processing. This is a novel finding when we contrast this work to past research on scarcity effects, which are usually triggered through rational claims or explicit amounts shown (e.g. Fromkin 1970; Verhallen 1982).

We believe this presentation is consistent with the theme of the conference and would "make a difference" as this topic has direct theoretical consumer behavior and managerial implications. Specifically, we have shown that the effect of product-to-space-ratio plays a positive role in increasing product preference and valuation, and yet this finding may be at odds with cost efficiency concerns that suggest a denser store maximizes retail rent utility. The present research could encourage researchers from these different fields to work together to determine the conditions and situations in which the display density effect can best be employed to maximize profits.

### Planning Under Paucity: Responses to Resource Scarcity Threats Depend on Childhood Environments

#### EXTENDED ABSTRACT

Financial planning is pervasive in consumers' lives. Not only does it impact how we spend money in our everyday lives, but it also has a profound effect on wealth accumulation and retirement

satisfaction (Ameriks, Caplan, and Leahy 2003; Elder and Rudolph 1999). Because a principal reason to plan is to have a better and more comfortable future, might uncertainties about the future change people's planning psychologies? For example, can cues indicating looming resource scarcity such as those related to economic recessions lead people to change their financial planning? Would such cues lead them to plan more or plan less?

Recent work suggests that the answer depends. Research indicates that people respond in divergent ways when faced with threats of resource scarcity based on their childhood resource conditions (Griskevicius et al., 2013, White et al., 2013). For example, adults raised in relatively resource-rich environments took fewer risks and became less impulsive under cues of resource scarcity, whereas those from relatively resource-deprived backgrounds responded to the same cues by taking more risks and becoming more impulsive (Griskevicius et al., 2013). In the present work, we draw on the cost-benefit framework of life history theory to investigate the effects of resource scarcity on people's financial planning behavior.

In Study 1, we experimentally manipulated resource scarcity cues by having people read a news article about the recent economic recession or having them read a control article. We then examined their beliefs about the importance of financial planning by using an adapted version of the propensity to plan scale (Lynch et al., 2009). Results revealed that for people growing up with relatively higher levels of family resources, the recession news article did not significantly affect their valuation of financial planning. However, among individuals growing up with relatively lower levels of family resources, recession cues *decreased* their valuation of financial planning.

In Study 2, we sought to replicate the results of Study 1 by using a behavioral measure of the value of planning. Resource scarcity was manipulated by having participants recall an incident when they felt financially deprived compared to their peers (Sharma & Alter, 2012). In the neutral condition, people simply responded to the measure of financial planning. Then, in an ostensibly unrelated task, respondents were informed that the experimenters were interested in knowing the kinds of information people are interested in learning in the context of retirement planning. They were then provided with a list of topics pertaining to retirement finances that they could choose to learn about. Importantly, they were informed that they could read as many or as few of the topics they were interested in. The dependent measure was the amount of time respondents spent on learning about retirement planning. Findings conceptually replicated the results of Study 1. Specifically, respondents who grew up with relatively higher levels of family resources did not differ significantly on learning about retirement planning under scarcity manipulation. In contrast, among those growing up with relatively lower levels of family resources, scarcity thoughts significantly decreased the amount of time they spent on learning about retirement planning.

Study 3 had two goals. First, to ensure the robustness of the experimental findings in Studies 1 and 2, we sought to conceptually replicate the results using a third methodology to prime resource scarcity—a photo slideshow (Griskevicius et al., 2013, Hill et al., 2012). Second, to test whether people's perceptions of personal control could be potential mediator of the relationship between resource scarcity cues and planning beliefs. Resource scarcity cues were manipulated by having participants view a slideshow with visual images suggestive of economic recession or control images. Next, participants rated their beliefs about the importance of planning and their perceptions of control over their financial behavior. Consistent with the results from Studies 1 and 2, Study 3 found that for people growing with relatively lower levels of family resources, recession

cues significantly *decreased* their rated importance of financial planning. Additionally, the changes in the importance of planning were found to be mediated by the changes in perceptions of personal control over financial behaviors.

These studies provide important new insights into the complex relationship between resource scarcity and people's financial behaviors. It draws on life history theory to explore why people from different childhood backgrounds might respond differently to modern stressors such as resource scarcity and uncertainty. It also identifies perceptions of personal control as an important variable that guides people's subsequent beliefs and behaviors pertaining to financial planning. This work has important implications for public policy professionals and others who wish to foster better financial planning behaviors in people from underprivileged backgrounds.

### The Effects of Resource Scarcity on the Ideal Female Body Size

#### EXTENDED ABSTRACT

When it comes to women's body ideals, is it true that thin is in? Or is shapely sexy? The answer to this question varies considerably across cultures. Although ultra-thin female models are idealized in Western nations like the United States, individuals living in nations where resources are scarce, tend to prefer women with a heavier body size (see e.g., Swami et al., 2010). This pattern repeats itself within nations, communities, and across the sexes. People living in relatively safe, affluent regions idealize thinner female bodies than those residing in more dangerous, lower SES communities (Swami et al., 2010). Resource scarcity and stress also increase the heaviness of the body that men most desire in their romantic partners (Swami & Tovée, 2012), but not necessarily themselves (Sobal & Stunkard, 1989).

Why do researchers regularly observe a relationship between resource scarcity and preference for a heavier female body ideal? Here, we use insights from two theoretical models in evolutionary biology – life history theory and the critical fat hypothesis – to examine whether this relationship might emerge from the different life history strategies typically adopted by individuals living in resource scarce versus resource plentiful environments. Female body fat plays a key role in women's fertility regulation, with thinness being related to suboptimal fertility (Frisch, 1985). Accordingly, we predicted that resource scarcity cues – which promote the contingent expression of a faster life history strategy and more immediate reproduction – would produce a preference shift away from the very thin, sub-fertile female ideal typically chosen by Western women toward a heavier, more fertile female form.

In Study 1, we experimentally manipulated cues of resource scarcity by having men and women read a news article about the recent economic recession. We then asked them about their developmental history and measured their perceptions of the ideal body size using the contour drawing figure rating scale CDFRS (Swami et al., 2010). We predicted that women who experienced earlier pubertal development – a physiological indicator of sensitization to a faster life history strategy – would respond to scarcity cues by shifting away from the very thin, sub-fertile body ideal typically favored by western women, toward a heavier, more fertile female ideal. Because body fat does not influence men's fertility, we predicted that no such effects would be found for men. The results of Study 1 supported these predictions.

In study 2, we used a similar priming methodology to explore whether we could conceptually replicate these results using a second cue to resource scarcity – cues to heightened environmental stress

and uncertainty. Participants read a news article about increasing stress and unpredictability in the modern world or a control article. Next, they reported on their pubertal timing and indicated the ideal female body size. As predicted, women who experienced earlier pubertal development chose a heavier female body ideal after readings a news article about increasing rates of violent crime compared to comparable controls.

Study 3 was designed to extend our findings in two ways. First, we sought to examine whether resource scarcity cues have implications for men's perceptions of the ideal *female* body size. Because successful enactment of faster life history strategies is critically dependent on female body fat, both men and women sensitized to faster reproductive strategies should respond to harshness by idealizing a heavier, more fertile female body size. Second, because pubertal timing is not the only developmental marker of life history strategies, Study 3 was also designed to test whether we could conceptually replicate the specific pattern of results found in Studies 1–3 using a different index of developmental history – childhood SES (see e.g., Griskevicius et al., 2011). We predicted that resource scarcity cues would interact with both men's and women's childhood SES, such that individuals growing up in lower SES environments would idealize a heavier female body size relative to individuals growing up in higher SES environments. As predicted, we found that men and women growing up in lower SES environments responded to resource scarcity cues by favoring a heavier, more fertile female body ideal.

The results of our three studies provide some of the first experimental evidence regarding how and why people living in relatively safe, affluent regions prefer a thinner female body ideal than those residing in more dangerous, lower SES communities. Specifically, the results of our studies lend support for the hypothesis that this variability might reflect the different life history strategies adopted by those living in resource scarce versus resource plentiful environments. Although this variability is often attributed to differences in exposure to Western media and the thinness of fashion models used in magazines and advertisements, the current research provides evidence that these findings may also reflect fundamental differences in people's psychologies based on the level of resources present in men's and women's childhood and adult environments. This work has important implications for researchers interested in various areas including physical appearances, food consumption, individual differences, and mating behaviors.

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

#### EXTENDED ABSTRACT

Scarcity is a prevalent condition that characterizes human existence. Mankind has regularly experienced periods of famine and draught (Chakravarthy and Booth 2004), modern economies often must cope with economic recessions (Griskevicius et al. 2013), and even in resource-rich environments people routinely encounter cues that emphasize the limited nature of products and resources (Cialdini 2009; Gitlin 2007). As a consequence, people often think about, worry about, and discuss scarcity-related concerns (Twist and Barker 2006). However, in spite of the frequency of cues and cognitions related to scarcity, our understanding of the psychological processes that result when the concept of scarcity is activated remains limited. In this research, we investigate how activating the concept of scarcity influences the way people process information. Specifically, we posit that scarcity-related cues can affect people's level of processing through the activation of an abstract mindset (Lieberman and Trope 2008).

Construal level theory (CLT; Liberman and Trope 1998) posits that psychological distance affects the way in which individuals mentally represent objects or events (Trope and Liberman 2003). More specifically, when events are psychologically distant, people represent them at a higher level, focusing on their superordinate, central, and general features, whereas when events are psychologically proximal, people represent them at a lower level, focusing on their subordinate, peripheral, and concrete features. Research has also shown that unrelated cues can promote these more abstract versus concrete levels of processing (Fujita et al. 2006; Freitas, Gollwitzer, and Trope 2004; Förster, Friedman, and Liberman 2004) and have carry-over effects on decision processes (Khan, Zhu, and Kalra 2011; Kim, Zhang, and Li 2008; Meyvis, Goldsmith, and Dhar 2012).

We add to this work by testing how exposure to scarcity-related cues affects consumers' level of construal. Prior work has shown that exposure to threat-related cues can narrow one's scope of attention to a more local (vs. global) level (Friedman and Förster 2010). Because exposure to scarcity-related cues might trigger cognitions related to threat, one thus might expect such cues to promote concrete levels of construal (Liberman and Trope 2008; Marguc, Förster, and Van Kleef 2011). This prediction is supported by research showing that being raised or put in an environment where resources are scarce changes how people allocate attention, specifically by shifting focus towards the scarcity-related problem and away from other problems or future considerations (Griskevicius et al. 2013; Shah, Shafir, and Mullainathan 2011).

However, we draw from research on resource constraints and goal pursuit to argue that exposure to scarcity-related cues induces people to adopt an abstract mindset. Indeed, research has shown that interfering forces (Higgins 2006) encountered during goal pursuit induce a more global, higher-level perspective in order to improve problem solving through the detection of alternative means or strategies, and that this shift in processing can carry over to tasks unrelated to one's goal pursuit (Marguc et al. 2011). Related research has also shown that constraints put on a creative process can improve creative thinking (Burroughs et al. 2011; Moreau and Dahl 2005). Therefore, in resource-rich environments, being exposed to scarcity-related cues may not be interpreted as a threat, but instead as an interfering force that induces taking a step back and processing information from a more abstract perspective. We test this prediction in three studies and find convergent results supporting our prediction.

First, to test whether activating the concept of scarcity induces people to adopt an abstract mindset, study 1 manipulated the activation of scarcity (episodic recall, adapted from Fischhoff et al. 2003) prior to having participants complete the Behavior Identification Form (BIF; Vallacher and Wegner 1989), which assesses people's level of representation (abstract "why" vs. concrete "how") of 25 different activities. In line with our prediction, participants primed with scarcity were more likely to select higher-level representations of behaviors ( $M = 17.05$ ) than participants exposed to a neutral prime ( $M = 14.81$ ;  $p = .054$ ).

Studies 2 and 3 demonstrate conceptual support for this effect, showing that activating the concept of scarcity broadens one's considerations. Prior work has shown that when individuals process information abstractly, they tend to categorize objects into fewer, more general, superordinate groups (Liberman and Trope 2008; Marguc et al. 2011; Waslak et al. 2006). Study 2 thus manipulated the activation of scarcity with a listing task (Roux, Goldsmith, and Bonezzi 2012), where participants had to list three things they "cannot do" (vs. "can do") when different resources are unavailable (vs. available). Participants then completed a categorization task (Waslak et

al. 2006), where they had to categorize three different lists of items (camping trip, household, and yard sale items) into groups. In line with our prediction, participants primed with scarcity classified the items into fewer categories overall ( $M = 6.12$ ) than those in the neutral prime condition ( $M = 6.64$ ;  $p = .057$ ).

Prior research has also shown that abstract thinking expands the boundaries of conceptual categories and increases the inclusion of atypical exemplars into a given category (Liberman and Trope 2008). Study 3 thus manipulated the activation of scarcity (listing task) prior to having participants complete a category inclusiveness task (Huang and Galinsky 2011, Isen and Daubman 1984), where they had to rate the extent to which strong, intermediate, and weak exemplars belonged in a given category. In line with our prediction, participants primed with scarcity demonstrated greater category inclusiveness for medium ( $M = 8.14$ ) exemplars than participants exposed to a neutral prime ( $M = 7.75$ ;  $p = .04$ ). A similar pattern of results emerged for the weak exemplars ( $M_{\text{scarcity}} = 5.90$ ;  $M_{\text{neutral}} = 5.48$ ;  $p = .07$ ), but not for the strong exemplars ( $M_{\text{scarcity}} = 9.87$ ;  $M_{\text{neutral}} = 9.77$ ;  $p = .13$ ), consistent with prior work (Huang and Galinski 2010).

In summary, the findings presented here advance our understanding of how being exposed to scarcity-related cues affects one's psychological orientation. Across three studies, we demonstrate that exposure to scarcity-related cues promotes more abstract construals. Although further research is necessary to fully understand the boundaries of these effects, this research provides an important step towards a better understanding of the psychology of scarcity.

## REFERENCES

- Ameriks, J., Andrew C., & Leahy, J. (2003). Wealth accumulation and propensity to plan. *Quarterly Journal of Economics*, 118 (3), 1007-47.
- Burroughs, James E., Darren W. Dahl, Page Moreau, Amitava Chattopadhyay, and Gerald J. Gorn (2011), "Facilitating and Rewarding Creativity during New Product Development," *Journal of Marketing*, 75 (July), 53-67.
- Chakravarthy, Manu V. and Frank W. Booth (2004), "Eating, Exercise, and "Thrifty" Genotypes: Connecting the Dots Toward an Evolutionary Understanding of Modern Chronic Diseases," *Journal of Applied Physiology*, 96, 3-10.
- Cialdini, Robert B. (2009), *Influence: Science and Practice*, 5th ed., Boston: Allyn & Bacon.
- Elder, Harold W., & Rudolph, P. M. (1999). Does retirement planning affect the level of retirement satisfaction? *Financial Services Review*, 8 (2), 117-27.
- Eroglu, S., & Harrell, G. D. (1986). Retail crowding: Theoretical and strategic implications. *Journal of Retailing*.
- Fischhoff, Baruch, Roxana M. Gonzalez, Deborah A. Small, and Jennifer S. Lerner (2003), "Judged terror risk and proximity to the World Trade Center," *Journal of Risk and Uncertainty*, 26, 137-51.
- Förster, Jens, Ronald S. Friedman, and Nira Liberman (2004), "Temporal Construal Effects on Abstract and Concrete Thinking: Consequences for Insight and Creative Cognition," *Journal of Personality and Social Psychology*, 87, 177-89.
- Freitas, Aantonio L., Peter M. Gollwitzer, and Yaacov Trope (2004), "The Influence of Abstract and Concrete Mindsets on Anticipating and Guiding Others' Self-Regulatory Efforts," *Journal of Experimental Social Psychology*, 40, 739-52.
- Friedman, Ronald S. and Jens Förster (2010), "Implicit Affective Cues and Attentional Tuning: An Integrative Review," *Psychological Bulletin*, 136 (5), 875-93.

- Frisch, R. E. (1985). Fatness, menarche, and female fertility. *Perspectives in Biology and Medicine*, 28, 611-633.
- Fujita, Kentaro, Yaacov Trope, Nira Liberman, and Maya Levin-Sagi (2006), "Construal Levels and Self-Control," *Journal of Personality and Social Psychology*, 90, 51-367.
- Gitlin, Todd (2007), *Media Unlimited: How the Torrent of Images and Sounds Overwhelms Our Lives*, New York, NY: Henry Holt.
- Griskevicius, V., Delton, A. W., Robertson, T. E., & Tybur, J. M. (2011). Environmental contingency in life history strategies: The influence of mortality and socioeconomic status on reproductive timing. *Journal of Personality and Social Psychology*, 100, 241-254.
- Griskevicius, Vladas, Joshua M. Ackerman, Stephanie M. Cantu, Andrew W. Delton, Theresa E. Robertson, Jeffry A. Simpson, Melissa Emery Thomson, and Joshua M. Tybur (2013), "When the Economy Falters, Do People Spend or Save? Responses to Resource Scarcity Depend on Childhood Environments," *Psychological Science*, 24 (2), 197-205.
- Higgins, E. Tory (2006), "Value From Hedonic Experience and Engagement," *Psychological Review*, 113, 439-60.
- Hill, S. E., Rodeheffer, C. D., Griskevicius, V., Durante, K., & White, A. E. (2012). Boosting beauty in an economic decline: mating, spending, and the lipstick effect. *Journal of personality and social psychology*, 103(2), 275-91.
- Huang, Li, & Galinsky, Adam D. (2011), "Mind-Body Dissonance: Conflict Between the Senses Expands the Mind's Horizons," *Social Psychological and Personality Science*, 2, 351-9.
- Inman, J. Jeffrey, Anil C. Peter, and Priya Raghubir (1997), "Framing the Deal: The Role of Restrictions in Accentuating Deal Value," *Journal of Consumer Research*, 24 (1), 68-79.
- Isen, Alice M. and Kimberly A. Daubman (1984), "The Influence of Affect on Categorization," *Journal of Personality and Social Psychology*, 47, 1206-17.
- Khan, Uzma, Meng Zhu, and Ajay Kalra (2011), "When Tradeoffs Matter: The Effect of Choice Construal on Context Effects," *Journal of Marketing Research*, 48 (1), 62-71.
- Kim, Kyeongheui, Meng Zhang, and Xiuping Li (2008), "Effects of Temporal and Social Distance on Consumer Evaluations," *Journal of Consumer Research*, 35 (4), 706-13.
- Liberman, Nira and Yaacov Trope (1998), "The Role of Feasibility and Desirability Considerations in Near and Distant Future Decisions: A Test of Temporal Construal Theory," *Journal of Personality and Social Psychology*, 75, 5-18.
- Liberman, Nira and Yaacov Trope (2008), "The Psychology of Transcending the Here and Now," *Science*, 322, 1201-5.
- Lynch, J. G., Netemeyer, R. G., Spiller, S. A., & Zammit, A. (2010). A generalizable scale of propensity to plan: The long and the short of planning for time and money. *Journal of Consumer Research*, 37, 108-128.
- Machleit, K. A., Eroglu, S. A., & Mantel, S. P. (2000). Perceived retail crowding and shopping satisfaction: what modifies this relationship?. *Journal of Consumer Psychology*, 9(1), 29-42.
- Machleit, K. A., Kellaris, J. J., & Eroglu, S. A. (1994). Human versus spatial dimensions of crowding perceptions in retail environments: A note on their measurement and effect on shopper satisfaction. *Marketing Letters*, 5(2), 183-194.
- Marguc, Janina, Jens Förster, and Gerben A. Van Kleef (2011), "Stepping Back to See the Big Picture: When Obstacles Elicit Global Processing," *Journal of Personality and Social Psychology*, 101 (5), 883-901.
- Meyvis, Tom, Kelly Goldsmith and Ravi Dhar (2012). "Brand Extensions and the Consumer Decision Environment: Pictures and Comparisons Shift Consumers' Emphasis from Fit to Quality," *Journal of Marketing Research*, 49 (2), 206-17.
- Moreau, C. Page and Darren W. Dahl (2005), "Designing the Solution: The Impact of Constraints on Consumers' Creativity," *Journal of Consumer Research*, 32 (1), 13-22.
- Pracejus, J. W., Olsen, G. D., & O'Guinn, T. C. (2006). How nothing became something: white space, rhetoric, history, and meaning. *Journal of Consumer Research*, 33(1), 82-90.
- Roux, Caroline, Kelly Goldsmith and Andrea Bonezzi (2012), "On the Consequences of Scarcity: When Limited Resources Promote Agentic Responses," *Manuscript under review*.
- Shah, Anuj. K., Eldar Shafir, and Sendhil Mullainathan (2011), "Some Consequences of Having Too Little," *Science*, 338, 682-5.
- Sharma, E., & Alter, A. L. (2012). Financial Deprivation Prompts Consumers to Seek Scarce Goods. *Journal of Consumer Research*, 39(3), 545-560.
- Sobal, J., & Stunkard, A. J. (1989). Socio-economic status and obesity: A review of the literature. *Psychological Bulletin*, 105, 260-275.
- Swami, V., Frederick, D. A., Aavik, T., Alcalay, L., Allik, J., Anderson, D., Zivcic-Becirevic, I. (2010). The attractive female body weight and female body dissatisfaction in 26 countries across 10 world regions: Results of the International Body Project I. *Personality and Social Psychology Bulletin*, 36, 309-325.
- Swami V. & Tovée, M. J. (2012). The impact of psychological stress on men's judgments of female body size. *PLoS ONE* 7(8): e42593.
- Trope, Yaacov and Nira Liberman (2003), "Temporal Construal," *Psychological Review*, 110, 403-21.
- Twist, Lynne and Teresa Barker (2006), *The Soul of Money: Reclaiming the Wealth of our Inner Resources*, New York, NY: W. W. Norton & Company.
- Vallacher, Robin R. and Daniel M. Wegner (1989), "Levels of Personal Agency: Individual Variation in Action Identification," *Journal of Personality and Social Psychology*, 57 (4), 660-71.
- Verhallen, Theo M. M. (1982), "Scarcity and Consumer Choice Behavior," *Journal of Economic Psychology*, 2 (December), 299-322.
- Wakslak, Cheryl J., Yaacov Trope, Nira Liberman, and Rotem Alony (2006), "Seeing the Forest When Entry Is Unlikely: Probability and the Mental Representation of Events," *Journal of Experimental Psychology: General*, 135 (4), 641-53.
- White, Andrew E., Yexin Jessica Li, Vladas Griskevicius, Steven L. Neuberg, & Douglas T. Kenrick. (in press). Putting all your eggs in one basket: Life history strategies, bet-hedging, and diversification. *Psychological Science*.
- Zeithaml, V. A. (1988). Consumer perceptions of price, quality, and value: a means-end model and synthesis of evidence. *The Journal of Marketing*, 2-22.