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Control Deprivation Motivates Acquisition of Utilitarian Products

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ABSTRACT

This research investigates how the fundamental desire for control affects product acquisition. The authors propose that consumers compensate for a loss of perceived control by buying utilitarian products (e.g., household cleaning agents) because of these products' association with problem solving, a quality that promotes a sense of control. Study 1 demonstrates this basic effect in a field setting involving real purchases, while studies 2 and 3 show that framing a product as utilitarian (vs. hedonic) moderates the effect of control on purchase intentions. Study 4 shows that a generalized problem-solving tendency mediates the effect of control on eagerness to pursue utilitarian consumption. Given the pervasiveness and ease of using product acquisition as a means to cope with psychological threat, this research has important implications for theory and practice.

Keywords: control, utilitarian consumption, and problem-solving tendency

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INTRODUCTION

Human beings have an innate desire for control over their environment (Langer 1975). We yearn for the ability to manage the processes and outcomes of events in our lives. However, the degree of control that we actually possess over our life events is far from perfect (e.g., recall the last time you were stuck in a traffic jam, or stranded at an airport due to a severe snowstorm). In extreme cases, a prolonged lack of control over one's environment could lead to passivity and withdrawal (i.e., learned helplessness; Abramson, Seligman, and Teasdale 1978). Yet under most circumstances of limited control, we display immense capability in regulating our sense of control by finding alternative means to assert control (Thompson 1993, 2009). Given prior theorizing that problem solving enhances one's sense of control (Mirowsky and Ross 1989), and that utilitarian products tend to be associated with problem solving, the present research asks the following question: Would control-deprived individuals be more likely to buy utilitarian products?

In this research, we propose that a perceived loss of control is an undesirable state that leads consumers to restore control through product acquisition. Specifically, when individuals perceive a loss of control over their environment, we posit that they will prefer to acquire utilitarian products in order to reinstate their sense of control. By illuminating how people cope via their consumption decisions when they experience perceived threat to control in their everyday lives, the present research contributes toward the growing literature on the impact of people's fundamental desire for control on consumer behavior (Cutright 2012; Hamerman and Johar 2013), while highlighting a potential psychological role of utilitarian products: control restoration.

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SEEKING CONTROL OVER THE ENVIRONMENT

Control refers to the ability to influence outcomes in one's environment (Skinner 1996). Social scientists have long recognized human beings' innate desire for control and the evolutionary role it played in ensuring the survival of our species (Averill 1973; Geary 1998). This desire for control manifests as early as infancy when children attend strongly to the effects their actions have on the environment (Piaget 1952), and continues to be evident in adulthood as people attempt to create favorable outcomes and prevent unfavorable outcomes in their lives. As noted earlier, we do not always possess complete control over our environment. Various situations in life such as being laid off by one's employer weaken our perceptions of control over the environment and accentuate our desire for control. An unmet need for control creates discomfort that in turn prompts people to augment perceived control (Brehm 1966). When the source of control deprivation is non-amenable to control, individuals are likely to bolster perceived control in other domains (Thompson 1993, 2009).

Compensatory Control Theory

According to compensatory control theory (CCT), control-deprived individuals may resort to different strategies to restore personal control, and importantly, these strategies do not have to be directed at the source of control deprivation (Landau, Kay, and Whitson 2015). For instance, individuals may affirm structured interpretations of the world when their perceived control is low. In research by Whitson and Galinsky (2008), participants who recalled past situations in which they had experienced a loss of control were more likely to perceive in a

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subsequent unrelated task illusory patterns among stimuli that were completely random and not meaningfully related (e.g., images of objects in visual noise). Doing so enabled the control-deprived participants to return order and structure to the world, a world in which "performing certain actions would reliably produce expected outcomes," thus restoring participants' perceived control (Kay et al. 2009; Landau et al. 2015, 696). Other studies have similarly demonstrated general structure-seeking tendencies (e.g., endorsement of hierarchy and preference for order-providing theories) among control-deprived individuals in domains unrelated to the source of control deprivation (Friesen et al. 2014; Rutjens et al. 2013).

More pertinent to the current research, CCT posits that people may also restore personal control by strengthening their belief that they have the ability to affect outcomes in their environment (e.g., forming illusory beliefs about one's influence over random events; Langer 1975), or that they have access to an external agent who possesses such an ability (Landau et al. 2015). In a study by Kay et al. (2008), participants who recalled low-control situations expressed stronger beliefs in God. This relationship emerged only when God was described as a controller of events in the world rather than a creator of the universe. In another study, the same authors showed that individuals with low perceived control tended to be more supportive of governmental control, particularly when they lived in countries with a benevolent (vs. corrupt) government. Taken together, this work suggests that control-deprived individuals may compensate for lowered perceived control by bolstering their beliefs that they have an external agent who is able to influence outcomes on their behalf. We propose that they may also compensate by problem solving to reaffirm their belief that they themselves can control their environment.

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Generalized Problem-Solving Tendency

A problem exists when people want to go from a current situation to a desired situation but the way to do so is not immediately obvious (Robertson 2001). Resolving the problem may involve some difficulty and thus require some thinking to devise the solution (Duncker and Lees 1945). In fact, developmental studies have shown that children who possess stronger control motivation find working on puzzles with some level of difficulty more gratifying than working on easily attainable goals (Harter 1974, 1975). In general, the action to be taken to solve the problem (i.e., the solution) must meet two requirements: 1) the problem-solver must be able to perform the action in his or her current situation, and 2) the desired end-state must be contingent upon the action (Duncker and Lees 1945). It is therefore apparent from these definitions that problem-solving behaviors in themselves represent attempts to control the environment.

In line with CCT, we posit that when people experience threat to their sense of control, they are motivated to engage in problem solving because such behaviors reinforce their beliefs in their ability to produce desired outcomes in their environment. Supporting our theorizing, research has suggested that problem solving can enhance people's sense of control (Mirowsky 1995; Mirowsky and Ross 1989). In particular, individuals who receive problem-solving training tend to report greater perceived control during post-training and follow-up evaluations (Nezu and Perri 1989). More imperatively, some empirical evidence suggests that control deprivation elicits a tendency to engage in problem solving (Roth and Bootzin 1974; Tennen and Eller 1977). Roth and Kubal (1975) found that participants exposed to an uncontrollable task expended more effort and solved more problems in a separate cognitive task. These authors proposed that increased engagement in problem solving constituted attempts to restore and exert control over the

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environment. Likewise, Inesi et al. (2011) showed that participants deprived of power and/or choice, both of which are sources of control, persisted for a longer period of time on an unsolvable anagrams task than participants who had at least one source of control.

As a conceptual replication of these findings, we randomly assigned seventy-two students (23 male) aged 18–40 (M = 22.19, SD = 4.64) from a northeastern university in the U.S. to write about either a personal incident in which they had experienced a loss of control over their environment (low-control condition; Whitson and Galinsky 2008) or a typical weekday in their life over the previous few weeks (baseline condition). After completing this recall task, participants from both conditions were given unsolvable anagrams to solve. In this ostensibly unrelated task on 'language assessment,' participants were presented anagrams one at a time and could choose to quit the task at any point or continue to solve a new anagram. Corroborating past research, *t*-test analyses revealed that compared to participants in the baseline condition, those in the low-control condition attempted more anagrams (M_{low}= 8.62, SD = 2.09; $M_{baseline}$ = 7.31, SD = 2.51; $t(70) = 2.41$, $p < .05$) and spent more time trying to solve the unsolvable anagrams (M_{low} = 256.19 sec, SD = 196.36 sec; $M_{baseline}$ = 173.27 sec, SD = 107.04 sec; $t(70) = 2.21$, $p < .05$). In sum, these results, together with findings from earlier work, provide supporting evidence that increased control motivation could trigger a generalized problem-solving tendency.

In the current work, we postulate that control-deprived individuals would engage in greater problem solving to strengthen their belief that they have the ability to achieve desired outcomes. Based on CCT, these resultant problem-solving behaviors do not have to be targeted at the source of control threat; rather, problem solving, in and of itself, would boost perceptions of control over the environment. Therefore, we predict that products that are typically associated with problem solving would be perceived as more attractive to control-deprived individuals.

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Acquiring such products equips people with the means to solve certain everyday problems or preempt such problems from arising, thereby affording a sense of control (Beggan 1991).

PRODUCT ACQUISITION AS A COMPENSATORY STRATEGY FOR PSYCHOLOGICAL NEEDS

Accumulating evidence suggests that consumers who experience specific psychological needs tend to consume products that offer benefits that alleviate those particular needs (Mandel, et al. 2016). For instance, people who experience threat to a certain dimension of their self-concept (e.g., believing that they are unexciting) are inclined to choose products that restore their confidence in that particular self-view (e.g., brands with exciting personalities; Gao, Wheeler, and Shiv 2008). As a second example, the enhanced need for belongingness following social exclusion drives people to consume products that help them strengthen social ties (Mead et al. 2011).

More pertinent to the current research, consumers have been found to use compensatory consumption as a means to satisfy basic needs that are related to control motivation (e.g., power and autonomy; Inesi et al. 2011; Skinner 1996). In particular, people who feel powerless tend to prefer products that signal high social status (e.g., a silk tie; Rucker and Galinsky 2008), while people whose autonomy is threatened tend to seek varied and unique product options (Levav and Zhu 2009). Although power and autonomy are closely intertwined with control, there are important conceptual distinctions among the three constructs. Control is a broader construct that refers to the ability to determine outcomes in one's environment, whereas power is specifically an interpersonal construct that refers to the ability to influence other people's outcomes through

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the asymmetric possession of resources (Inesi et al. 2011; Keltner, Gruenfeld, and Anderson 2003; Thibaut and Kelley 1959). Control also involves experiencing the contingency between one's own actions and the achieved outcomes, whereas the need for autonomy is the desire to experience oneself as the sole initiator of one's own actions (Brehm 1966; Deci and Ryan 1985). People with low perceived control feel ineffective in producing certain outcomes, while people with low perceived autonomy feel denied of their freedom to act according to their own will and thus are likely to experience reactance (Brehm 1966). Together, these findings suggest that people are likely to employ compensatory consumption to meet their need for control albeit using other forms of consumption.

Recent research has begun to shed some light on the effects of control motivation on consumption behaviors. When people experience a loss of control, they tend to prefer structured consumption (e.g., products with borders and organized retail environments; Cutright 2012), suggesting that people compensate for their loss of control by upholding beliefs that the world is ordered and structured. These individuals may also prefer products that require high effort to feel empowered (Cutright and Samper 2014). The current research adds to this modest body of research that underscores the importance of understanding how products can be used to restore one's psychological sense of control. Specifically, it extends this literature on the effects of control loss on consumption preferences by investigating a hitherto unexamined phenomenon: consumers compensate for their loss of control by strategically acquiring products that are typically associated with problem solving, that is, utilitarian products.

UTILITARIAN PRODUCTS AS A SOURCE OF CONTROL

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By definition, utilitarian products are consumer goods that are primarily consumed or used for instrumental purposes (e.g., stationery and household cleaning agents; Khan, Dhar and Wertenbroch 2005; Strahilevitz and Myers 1998). They are often contrasted with hedonic products—consumer goods that are primarily consumed for sensory pleasure and enjoyment (e.g., chocolates and massage chairs; Holbrook and Hirschman 1982). Whereas the experience of consuming hedonic products constitutes the end state that consumers seek when they acquire such products, utilitarian products are typically purchased as means to achieving tangible and objective outcomes in the environment (Batra and Ahtola 1990).

We propose that utilitarian products tend to be seen as solutions to various daily problems. For instance, a screwdriver is used to affix screws in order to hold objects together and prevent the objects from falling apart. In the same vein, consumers asked to generate adjectives for both hedonic and utilitarian products tend to describe utilitarian but not hedonic products as problem-solving (Voss, Spangenberg, and Grohmann 2003).

As a pilot test, we asked seventy-seven Mechanical Turk participants (41 male) aged 19–72 (M = 39.62, SD = 12.71) to rate the consumption or use of various hedonic products (e.g., chocolates, video games, and art pieces) and utilitarian products (e.g., vacuum cleaner, flash drive, and laundry detergent). We selected a variety of products that consumers commonly consume or use and that are likely deemed to be unambiguously hedonic or utilitarian. Participants rated these products on two 7-point scales (1 = *not problem-solving* and 7 = *problem-solving*; 1 = *does not give a sense of control* and 7 = *gives a sense of control*). Their ratings of the utilitarian products were averaged, as were their ratings of the hedonic products. Paired *t*-tests revealed that participants were more likely to rate the consumption of utilitarian (vs. hedonic) products as problem-solving ($M_{\text{utilitarian}}$ = 6.30, SD = .84; M_{hedonic} = 3.30, SD =

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1.35; $t(76) = 18.17$, $p < .001$) and providing a greater sense of control ($M_{utilitarian}$ =5.54, SD = 1.20; $M_{hedonic}$ = 3.87, SD = 1.44; $t(76) = 8.42$, $p < .001$). Together, these findings suggest that utilitarian products are more strongly associated with problem solving and achieving control than hedonic products.

Accordingly, if utilitarian products are generally perceived as means or tools that people use to solve problems in their environment, then when consumers experience a loss of perceived control, they should exhibit greater preference for utilitarian products. Acquiring such products would signal to oneself the possibility of attaining desirable outcomes and pre-empting problematic situations from occurring, and thus satisfy consumers' desire for control. More formally,

H1: Consumers who perceive a loss of control would be more likely to acquire utilitarian products than consumers who do not perceive threat to their sense of control; however, the same tendency would not be observed for hedonic products.

H2: A generalized problem-solving tendency mediates the effect of perceived control loss on consumers' preference for utilitarian products.

OVERVIEW OF THE PRESENT STUDIES

The first three studies examined the impact of control motivation on preference for utilitarian products (hypothesis 1). In study 1, we manipulated shoppers' perceived control before they began shopping and measured their actual purchase of utilitarian products at a supermarket. In studies 2 and 3, we investigated whether control deprivation would increase people's intention to purchase products (i.e., a pair of sneakers in study 2 and juice in study 3)

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framed as utilitarian (vs. hedonic). Finally, study 4 examined the underlying mechanism by testing whether the relationship between control deprivation and eagerness to pursue utilitarian consumption would be mediated by a generalized problem-solving tendency (hypothesis 2).

STUDY 1: PERCEIVED CONTROL IN THE FIELD

Study 1 examined the purchase behavior of low-control versus high-control shoppers at a mid-size supermarket (about 5,000 square feet) located in a Northeastern city in the U.S. If low control indeed elicits a compensatory response, then we should observe greater desire for products typically associated with problem solving, which would be manifested in an increased purchase of utilitarian products. In comparison, hedonic products are not typically associated with problem solving; therefore, shoppers who perceived a loss of control should not have an increased desire for these products.

Participants and Procedure

A research assistant invited shoppers entering the supermarket to participate in a short study for a $2-coupon. Shoppers who agreed to participate were randomly assigned to either a low- or high-control condition. We manipulated control using an autobiographical recall task adapted from Whitson and Galinsky (2008). Participants in the low-control (high-control) condition were asked to write a short essay of about 75 to 100 words concerning a personal incident in which they had experienced a loss of control (heightened sense of control) over their environment. They were instructed to describe the incident as vividly and in as much detail as

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possible. An example of a low-control incident was a technical failure during an important presentation, while an example of a high-control incident was being able to answer all the questions in a difficult exam.

Upon completing the autobiographical recall task, all participants commenced shopping. After shopping, they handed their receipt to another research assistant at the checkout area to redeem their coupon. Based on the receipts, we recorded information about the products shoppers purchased, whether these products were on promotion, and the monetary amount shoppers spent. Ten shoppers (6 from the low-control condition, 4 from the high-control condition) did not redeem their coupon and were excluded from the sample. The final sample comprised 134 shoppers (58 male) aged 16–85 (M = 31.33, SD = 14.34).

Results and Discussion

Eight participants (5 from the low-control condition, 3 from the high-control condition) were excluded from the sample because they misread or failed to follow the instructions in the control manipulation task (e.g., they stated that they did not have any incidents to report) and gave irrelevant accounts (e.g., their general philosophies about control), leaving a sample of 126 participants.

Manipulation Check. Two raters (blind to the assigned conditions) independently scored participants' writings for level of perceived control on a scale from -5(*large amount of loss of control*) to +5(*large amount of gain in control*) (r = .98). High-control shoppers scored

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significantly higher on this measure (M = 4.05, SD = .85) than low-control shoppers (M = -3.80, SD = 1.52; $t(124) = 35.84$, $p < .001$), indicating that the control manipulation was successful.

Main Analyses. Two other independent raters classified each product participants purchased as "utilitarian", "hedonic", or "undetermined" (Kappa = .72; disagreements were resolved through discussion). They classified these products according to definitions of hedonic and utilitarian consumption by Strahilevitz (1999, 219-220): hedonic products are those that are consumed "for sensual pleasure, fantasy, and fun" (e.g., chocolates, soda), whereas utilitarian products are those that are consumed "to fill a basic need or accomplish a functional task" (e.g., skim milk, painkillers). Ambiguous products that may be consumed for both pleasure and functional need were classified as "undetermined" (e.g., unspecified grocery items).

A 2 (perceived control: low vs. high) × 3 (product type: hedonic vs. utilitarian vs. undetermined) mixed ANOVA revealed a significant main effect of perceived control such that low-control participants bought more products (M = 3.89, SD = 3.80) than high-control participants (M = 2.56, SD = 1.49; $F(1, 124) = 6.17$, $p < .05$), and a significant main effect of product type ($F(1, 124) = 18.43$, $p < .001$) such that participants bought fewer undetermined products (M = .40, SD = .74) than hedonic (M = 1.18, SD = 1.24; $F(1, 124) = 30.08$, $p < .001$) and utilitarian products (M = 1.60, SD = 2.43; $F(1, 124) = 37.92$, $p < .001$). Participants bought marginally significantly more utilitarian products than hedonic products ($F(1, 124) = 3.09$, p = .08). These two main effects were qualified by a significant interaction between perceived control and product type ($F(2, 248) = 3.65$, $p < .05$). Specifically, consistent with our prediction, low-control participants bought more utilitarian products (M = 2.11, SD = 3.07) than high-control participants (M = 1.09, SD = 1.43; $F(1, 124) = 5.75$, $p < .05$). By contrast, low- and high-

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control participants did not differ significantly in the number of hedonic products (M_{low} = 1.32, SD = 1.43 vs. M_{high} = 1.05, SD = 1.00; $F(1, 124) = 1.58$, $p = .21$) or the number of undetermined products (M_{low} = .39, SD = .71 vs. M_{high} = .42, SD = .77; $F(1, 124) = .07$, $p = .79$) they bought.

In addition, *t*-test analyses revealed that low-control participants spent more money than high-control participants (M_{low} = $11.08, SD = $9.88; M_{high} = $7.56, SD = $5.25; $t(124) = 2.51$, $p < .05$). Importantly, this difference in expenditure was driven mainly by participants' expenditure on utilitarian products: low-control participants spent more money on utilitarian products than high-control participants (M_{low} = $5.91, SD = $8.18 vs. M_{high} = $3.00, SD = $4.08; $t(121) = 2.49$, $p < .05$); there were no significant differences across conditions in the amounts spent on hedonic and undetermined products (p's > .16). Lastly, there was no difference between low- and high-control participants in the number of promotional items they purchased (M_{low} = .06, SD = .25 vs. M_{high} = .14, SD = .56; $t(124) = -1.00$, $p = .32$).

Together, these results provided initial evidence for hypothesis 1 that control motivation leads people to buy more utilitarian products but not hedonic products. By testing our hypothesis in a real-world shopping context, we demonstrated the external validity of this effect. Nonetheless, it is plausible that it was the high-control shoppers, and not the low-control shoppers, who were driving the observed effects. Furthermore, the utilitarian and hedonic products in this study might have varied in other systematic ways (e.g., compared to the utilitarian products, the hedonic products comprised a larger proportion of edible products than inedible products); hence, other product differences might have been responsible for the observed effects. Study 2 addressed these limitations by manipulating three levels of control—low-, high- and baseline control—and testing whether framing *the same product* as utilitarian versus hedonic would lead to similar results.

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STUDY 2: PURCHASING SNEAKERS

To ensure that other systematic differences beyond the hedonic-utilitarian distinction were not driving the hypothesized effects, participants in study 2 were presented with the same product (i.e., a pair of sneakers) that was framed as either utilitarian or hedonic, and were asked to indicate their intention to purchase the product. We chose sneakers as the product stimulus because they could be worn primarily for their style (more characteristic of hedonic consumption) or functionality (more characteristic of utilitarian consumption). Another goal of this study was to validate that the hypothesized effect is driven by control deprivation and not a high sense of control. To this end, we compared the low-control condition to both the baseline and high-control conditions. We predicted that control-deprived participants would exhibit a greater intention to purchase the utilitarian (but not hedonic) pair of sneakers than participants in the other two conditions (hypothesis 1).

Participants and Procedure

Two hundred and fifty-nine U.S. participants (106 male), aged 18–73 (M = 35.39, SD = 13.17), were recruited through Amazon's Mechanical Turk. A 3 (perceived control: low vs. high vs. baseline) × 2 (product type: utilitarian vs. hedonic) between-subjects design was employed to test our prediction. Participants were randomly assigned to one of the six conditions. To manipulate participants' perceived control, we employed a similar autobiographical recall task as the one we used in study 1. Participants in the low-control and high-control conditions were

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given the same instructions as in study 1. Participants in the baseline condition, however, wrote about a typical weekday in their life over the past few weeks.

After completing the recall task, participants answered a product evaluation survey about sneakers that was ostensibly unrelated to the recall task. They were presented with a description of either a pair of hedonic sneakers or a pair of utilitarian sneakers from label X. In the hedonic condition, the stylistic aspects of the sneakers were emphasized. By contrast, in the utilitarian condition, the functional aspects of the sneakers were emphasized (see appendix A).

Participants first rated how likely (1 = *very unlikely*, 7 = *very likely*) and interested (1 = *not at all interested*, 7 = *very interested*) they were to buy the given pair of sneakers from label X, and stated how much they were willing to pay for this pair of sneakers. Adopting Strahilevitz's (1999) definitions of hedonic and utilitarian consumption, we then asked participants to indicate on 7-point scales (1 = *not at all*, 7 = *extremely*) how much they perceived buying this pair of sneakers to be representative of pleasure-oriented consumption (i.e., something fun or experiential) and goal-oriented consumption (i.e., something which one buys to carry out a necessary function or task in one's life). Finally, to ensure that participants were taking the survey seriously, we inserted an attention check question that instructed them to ignore the response format of the question, and instead enter a specific response to this question (Oppenheimer, Meyvis, and Davidenko 2009). (We included an attention check in all the subsequent studies as well.)

Results and Discussion

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Twenty-three participants (6 from the baseline/hedonic condition, 6 from the high-control/hedonic condition, 4 from the high-control/utilitarian condition, 3 from the low-control/utilitarian condition, 2 from the low-control/ hedonic condition, 2 from the baseline/utilitarian condition) were excluded from the sample because they misread or failed to follow the instructions in the control manipulation task and gave irrelevant accounts (n = 8), or failed the attention check (n = 15), leaving a sample of 236 participants.

Product-Type Manipulation Check. To test whether the product-type manipulation was successful, participants' ratings of how much buying the given pair of sneakers was representative of goal-oriented consumption were submitted to a two-way ANOVA (perceived control × product type). As intended, there was a significant main effect of the product-type manipulation such that participants who were presented with the utilitarian pair of sneakers perceived buying them as more representative of goal-oriented consumption (M = 5.13, SD = 1.48) than those who were presented with the hedonic product (M = 3.27, SD = 1.68; $F(1, 230) = 88.66$, $p < .001$). There was also a significant main effect of perceived control ($F(1, 230) = 4.62$, $p < .05$) such that low-control participants rated the given pair of sneakers as more representative of goal-oriented consumption (M = 4.62, SD = 1.76) than baseline (M = 4.14, SD = 1.81) and high-control participants (M = 4.03, SD = 1.88; $p < .005$). Baseline participants' ratings did not differ significant from high-control participants' ratings ($p = .48$). However, the interaction between control and product type was not significant ($p = .32$).

Participants' ratings of how much buying the given pair of sneakers was representative of pleasure-oriented consumption were also submitted to the same two-way ANOVA. There was a significant main effect of the product-type manipulation such that participants perceived buying

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the hedonic pair of sneakers to be more representative of pleasure-oriented consumption (M = 5.07, SD = 1.52) than buying the utilitarian pair of sneakers (M = 3.89, SD = 1.55; $F(1, 230)$ = 33.69, $p < .001$). Neither the main effect of control nor the interaction between control and product type was significant (p's > .51). Together, these results showed that the product-type manipulation worked as intended.

Main Analyses. Participants' ratings of how likely and interested they would be to buy the pair of sneakers were averaged to form a purchase-intention index (r = .87). We hypothesized that low-control participants would have a stronger intention to purchase the pair of utilitarian sneakers than high-control and baseline participants, while intention to purchase the pair of hedonic sneakers would not be significantly different among the three conditions (hypothesis 1). To test this hypothesis, we ran a two-way ANOVA on purchase intentions with perceived control and product type as independent factors. There was a significant main effect of product type such that participants expressed a greater intention to buy the utilitarian sneakers (M = 4.44, SD = 1.52) than the hedonic sneakers (M = 3.92, SD = 1.41; $F(1, 230) = 8.93$, $p < .005$). More importantly, this main effect was qualified by a significant interaction between perceived control and product type ($F(1, 230) = 3.61$, $p < .05$; see figure 1, top panel). As predicted, a follow-up contrast analysis showed that low-control participants were more likely to buy the utilitarian pair of sneakers (M = 5.08, SD = 1.49) than high-control participants (M = 4.27, SD = 1.43) and baseline participants (M = 4.14, SD = 1.52; $F(2, 230) = 4.46$, $p < .05$). Pairwise comparisons indicated that intentions to buy the utilitarian pair of sneakers were significantly stronger for low-control participants than high-control ($p < .05$) and baseline participants ($p < .01$). However, low-control participants were not more likely to buy the hedonic sneakers (M = 3.78, SD = 1.25)

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than high-control participants (M = 4.19, SD = 1.43) and baseline participants (M = 3.82, SD = 1.52; $F(2, 230) = .93$, $p = .40$). There was no significant main effect of control ($p = .16$).

Insert Figure 1 about here

The same two-way ANOVA with perceived control and product type as independent factors was performed on the amount participants were willing to pay for the given pair of sneakers. Again, a significant interaction between perceived control and product type emerged ($F(1, 230) = 5.48$, $p < .01$; see figure 1, bottom panel). A follow-up contrast analysis revealed that low-control participants were willing to pay more for the utilitarian pair of sneakers (M = \$53.60, SD = \$23.37) than high-control participants (M = \$40.59, SD = \$20.10) and baseline participants (M = \$43.65, SD = \$20.25; $F(2, 230) = 3.57$, $p < .05$). Pairwise comparisons indicated that the amount was significantly higher for low-control participants than both high-control ($p < .05$) and baseline participants ($p < .05$). Interestingly, perceived control also had a marginally significant simple main effect on the amount participants were willing to pay for the hedonic pair of sneakers ($F(2, 230) = 2.43$, $p = .09$). High-control participants were willing to pay significantly more for the hedonic pair of sneakers (M = \$49.33, SD = \$25.53) than low-control participants (M = \$38.61, SD = \$18.66; $p < .05$) but not baseline participants (M = \$41.02, SD = \$22.70; $p < .10$). The main effects of control and product type were non-significant (p's > .30).

Results from study 2 demonstrated that framing a product that could be consumed for functional or pleasurable reasons as primarily utilitarian increases people's preference for that

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product when they experience perceived control loss. In the next study, we sought to test whether this framing effect would also emerge with a different product category.

STUDY 3: PURCHASING SUGARCANE JUICE

Study 3 aimed to replicate the basic effect of control deprivation on preference for utilitarian products using another product category (i.e., a juice beverage). A juice beverage was chosen as the focal product because juice could be consumed primarily for its good taste (more characteristic of hedonic consumption) or nutritional benefits (more characteristic of utilitarian consumption). Similar to study 2, following the control manipulation, participants were presented with the same juice beverage that was advertised as either utilitarian or hedonic, and were asked to indicate their intention to purchase a regular size cup of the beverage. We predicted that in accordance with hypothesis 1, when the juice beverage was advertised as a utilitarian product, low-control participants would exhibit a greater purchase intention for the beverage than baseline participants; when the juice beverage was advertised as a hedonic product instead, there would be no difference in purchase intentions between the two conditions. We did not include the high-control condition in this study because the main focus of our research is to examine the influence of control deprivation on product preference; moreover, the previous study revealed that there was no difference between the high-control and baseline conditions in preference for the utilitarian pair of sneakers.

Participants and Procedure

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Two hundred and one participants (101 male), aged 17–54 (M = 30.89, SD = 8.76), were recruited at a shopping mall in a city in Asia. A 2 (perceived control: low vs. baseline) × 2 (product type: utilitarian vs. hedonic) between-subjects design was employed to test our prediction. Participants were randomly assigned to one of the four conditions. To manipulate participants' perceived control, we employed the autobiographical recall task used in study 2, excluding the high-control condition. After completing the recall task, participants were asked to complete an ostensibly unrelated study about an advertisement for a beverage. They were asked to imagine that they were thinking of getting a beverage and came across an ad about sugarcane juice, a beverage commonly sold in food outlets in the Asian city. In the utilitarian condition, the ad emphasized the nutritional aspects (e.g., rehydrating and fights common infections) of consuming the juice; by contrast, in the hedonic condition, the ad emphasized the pleasurable aspects (e.g., refreshing and tasty) of consuming the juice (see appendix B).

Participants rated how likely (1 = *very unlikely*, 7 = *very likely*) and interested (1 = *not at all interested*, 7 = *very interested*) they were to purchase a regular size cup of sugarcane juice after seeing the ad. Then, they were asked to indicate on a 7-point scale (1 = *not at all*, 7 = *to a large extent*) the extent to which the problem-solving properties of the sugarcane juice influenced their likelihood and interest to purchase a regular cup of sugarcane juice. They were also asked to indicate on 7-point scales (1 = *not at all*, 7 = *to a large extent*) how much they thought the ad highlighted how drinking sugarcane juice is representative of pleasure-oriented consumption and goal-oriented consumption, and how much they thought the ad highlighted how drinking sugarcane juice could help them solve a particular problem or prevent a particular problem from happening. Finally, participants were asked to indicate on 7-point scales how much they liked sugarcane juice in general (1 = *dislike extremely*, 7 = *like extremely*), as well as

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how hungry and thirsty they were during the study (1 = *not at all thirsty/hungry*, 7 = *extremely thirsty/hungry*).

Results and Discussion

Twenty-six participants (10 from the low-control/utilitarian condition, 6 from the baseline/utilitarian condition, 6 from the low-control/hedonic condition, 4 from the baseline/hedonic condition) were excluded from the sample because they misread or failed to follow the instructions in the control manipulation task and gave irrelevant accounts (n = 19), or failed the attention check (n = 7), leaving a sample of 175 participants.

Product-Type Manipulation Check. To test whether the product-type manipulation was successful, participants' ratings of how much they thought the ad highlighted how drinking sugarcane juice was representative of goal-oriented consumption, pleasure-oriented consumption and problem solving were submitted to a two-way ANOVA (perceived control × product type). There was a significant main effect of the product-type manipulation on the goal-orientation item such that participants who saw the utilitarian ad thought the ad highlighted how drinking sugarcane juice was representative of goal-oriented consumption to a greater extent (M = 4.08, SD = 1.83) than those who saw the hedonic ad (M = 3.34, SD = 1.80; $F(1, 171) = 8.05$, $p < .01$). There was also a significant main effect of the product-type manipulation on the pleasure-orientation item such that participants who saw the hedonic ad thought the ad highlighted how drinking sugarcane juice was representative of pleasure-oriented consumption to a greater extent (M = 4.01, SD = 1.71) than those who saw the utilitarian ad (M = 3.38, SD = 1.77; $F(1, 171)$ =

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5.30, $p < .05$). Lastly, there was a significant main effect of the product-type manipulation on the problem-solving item such that participants who saw the utilitarian ad thought the ad highlighted how drinking sugarcane juice could help them solve a particular problem or prevent a particular problem from happening to a greater extent ($M = 3.77$, SD = 1.89) than those who saw the hedonic ad ($M = 2.91$, SD = 1.72; $F(1, 171) = 10.33$, $p < .005$). Neither the main effect of control nor the interaction between control and product type on any of the three ratings was significant (p's > .12). Together, these results showed that the product-type manipulation worked as intended, and that people were inclined to view the utilitarian ad as highlighting the problem-solving properties of sugarcane juice.

Main Analyses. Participants' ratings of how likely and interested they would be to purchase a regular size cup of sugarcane juice after seeing the ad were averaged to form a purchase-intention index ($r = .81$). A two-way ANOVA of participants' purchase intention with perceived control and product type as independent factors revealed a marginally significant interaction effect between perceived control and product type ($F(1, 171) = 3.31$, $p = .07$). The simple main effect of perceived control within each product-type condition was non-significant, but directionally consistent with our hypothesis (p's = .20 in both hedonic and utilitarian conditions). Because liking for sugarcane juice and thirstiness were correlated with purchase intention ($r = .55$, $p < .001$ and $r = .15$, $p < .05$ respectively), we reran the analysis controlling for these two variables as covariates. Results showed a significant interaction between perceived control and product type ($F(1, 169) = 5.60$, $p < .05$; see figure 2, top panel). Within the utilitarian condition, low-control participants indicated greater purchase intentions ($M = 4.85$, SD = 1.75) than baseline participants ($M = 4.36$, SD = 1.70; $F(1, 169) = 4.16$, $p < .05$). However, within the

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hedonic condition, there was no difference in purchase intentions between low-control (M = 4.18, SD = 1.73) and baseline participants (M = 4.65, SD = 1.77; $F(1, 169) = 1.66$, $p = .20$). The main effects of control and product-type were not significant (p's > .56). Liking for sugarcane juice was a significant predictor of purchase intentions ($\beta = .73$, $F(1, 169) = 72.30$, $p < .001$), but not thirstiness ($\beta = .09$, $F(1, 169) = 2.54$, $p = .11$).

Insert Figure 2 about here

Submitting participants' ratings of the extent to which the problem-solving properties of the sugarcane juice influenced their purchase intentions to another two-way ANOVA with perceived control and product type as independent factors revealed a marginally significant interaction between perceived control and product type ($F(1, 171) = 3.17$, $p = .08$). The simple main effect of perceived control was significant in the utilitarian condition ($F(1, 171) = 5.47$, $p < .05$) but not in the hedonic condition ($p = .89$). After controlling for liking for sugarcane juice and thirstiness, there was a significant main effect of perceived control such that low-control participants indicated that the problem-solving properties of sugarcane juice influenced their purchase intentions to a larger extent (M = 4.49, SD = 2.12) than baseline participants (M = 4.02, SD = 2.05; $F(1, 169) = 3.99$, $p < .05$). More importantly, the interaction effect became significant ($F(1, 169) = 3.98$, $p < .05$; see figure 2, bottom panel). Within the utilitarian condition, low-control participants indicated that the problem-solving properties of sugarcane juice influenced their purchase intentions to a larger extent (M = 4.95, SD = 1.97) than baseline participants (M = 3.89, SD = 2.03; $F(1, 169) = 7.63$, $p < .01$). However, within the hedonic condition, there was no difference between low-control (M = 4.09, SD = 2.18) and baseline participants (M = 4.15, SD =

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2.10; $F(1, 169) = .00$, $p > .99$) in this influence. Finally, liking for sugarcane juice was a significant predictor ($\beta = .45$, $F(1, 169) = 14.56$, $p < .001$), whereas thirstiness was a marginally significant predictor ($\beta = .15$, $F(1, 169) = 3.45$, $p < .07$) of this influence.

Results from study 3 replicated our basic effect that control-deprived individuals tend to desire utilitarian products (hypothesis 1). Furthermore, we found that control-deprived individuals assigned greater importance to the problem-solving properties of the product when they considered the utilitarian juice beverage. Nonetheless, we do not have conclusive evidence that a generalized tendency to engage in problem solving was indeed responsible for our effect. Therefore, in the next study, we tested whether generalized problem-solving tendency mediated the effect of control deprivation on eagerness to pursue utilitarian consumption (hypothesis 2).

STUDY 4: GETTING A MASSAGE–
PROBLEM-SOLVING TENDENCY AS MEDIATOR

Having established the basic effect in the first three studies, the primary aim of study 4 was to test whether it is indeed a general motivation to engage in problem solving that makes utilitarian products more desirable to consumers when they have low perceived control. In a pilot test, we manipulated participants' perceived control and measured their problem-solving tendency. One hundred and fifty-six U.S. participants (87 male) aged 18–68 ($M = 35.39$, SD = 13.17) recruited through Mechanical Turk were randomly assigned to either a low-control or baseline condition. We manipulated perceived control using the autobiographical recall task from study 3. Subsequently, we asked participants to indicate on a 7-point scale (1 = *strongly disagree*, 7 = *strongly agree*) their desire to engage in problem solving on four items: "I would

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like to take action to try to make a problematic situation better," "I would like to concentrate my efforts on doing something about a current or potential problem," "I want to try to come up with a strategy about what to do regarding a problem," "I want to think about what steps to take to solve a problem." These items were adapted from the brief COPE inventory which measures problem-focused coping behaviors (Carver 1997). Ratings on these items were averaged to form a problem-solving tendency index ($\alpha = .96$). Results showed that low-control participants reported a greater problem-solving tendency ($M = 5.76$, SD = 1.16) than baseline participants ($M = 5.09$, SD = 1.34; $t(154) = 3.31$, $p < .005$).

In study 4, we manipulated product type using consumption goals (Botti and McGill 2011; Pham 1998): participants were asked to imagine a scenario in which they were planning to get a massage either for hedonic or utilitarian reasons. After participants indicated their level of eagerness to schedule their massage appointment, we measured their generalized tendency to engage in problem solving. We predicted that in line with hypothesis 1 low-control participants would be more eager to schedule the appointment than baseline participants when the consumption goal was utilitarian (vs. hedonic). Importantly, we also predicted that this relationship would be mediated by their problem-solving tendency (hypothesis 2).

Participants and Procedure

Two hundred and seventeen U.S. participants (112 male), aged 18-72 ($M = 34.81$, SD = 11.82) were recruited through Mechanical Turk. A 2 (perceived control: low vs. baseline) × 2 (consumption goal: utilitarian vs. hedonic) between-subjects design was employed to test our

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prediction. Participants were randomly assigned to one of the four conditions. We manipulated participants' perceived control using the autobiographical recall task from study 3.

After completing the recall task, participants were asked to complete a scenario study that was ostensibly unrelated to the recall task. They were asked to imagine that they were deciding whether to schedule an appointment for a professional massage at a local spa. We varied participants' goal for getting the massage. In the utilitarian condition, participants were told that their goal was to get a massage to provide immediate relief and reduce the body fatigue that they had been experiencing. In the hedonic condition, they were told that their goal was to treat themselves to an enjoyable time at the spa, and hence they would like the massage to be pleasurable and relaxing. Participants rated on a 100-point sliding scale how eager they were to schedule the spa appointment (1 = *not at all eager*, 100 = *very eager*).

Following that, we measured generalized problem-solving tendency by asking them to indicate on a 7-point scale (1 = *strongly disagree*, 7 = *strongly agree*) their desire to engage in problem solving on the same four items from the pilot test ($\alpha = .94$). Next, as manipulation checks, participants rated on separate 7-point scales (1 = *not at all*, 7 = *extremely*) how much they thought getting the massage was representative of pleasure-oriented consumption, goal-oriented consumption, and action taken to solve a problem. Finally, they were asked to indicate on 7-point scales how often they go for a massage (1 = *never*, 7 = *very frequently*) and how much they like getting a massage (1 = *not at all*, 7 = *very much*).

Results and Discussion

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Fourteen participants (4 from the low-control/hedonic condition, 4 from the low-control/utilitarian condition, 3 from the baseline/hedonic condition, 3 from the baseline/utilitarian condition) were excluded from the sample because they misread or failed to follow the instructions in the control manipulation task and gave irrelevant accounts (n = 7), or failed the attention check (n = 7), leaving a sample of 203 participants.

Consumption-Goal Manipulation Check. To test whether the consumption-goal manipulation was successful, participants' ratings of how much they thought getting the massage was representative of goal-oriented consumption, pleasure-oriented consumption, and action taken to solve a problem were submitted to a two-way ANOVA (perceived control × consumption goal). There was a significant main effect of the consumption-goal manipulation on goal-oriented consumption such that participants in the utilitarian condition thought that getting the massage was more representative of goal-oriented consumption (M = 4.25, SD = 1.74) than participants in the hedonic condition (M = 3.65, SD = 1.77; $F(1,199) = 6.57$, $p < .05$). There was also a significant main effect of the manipulation on pleasure-oriented consumption such that participants in the hedonic condition thought that getting the massage was more pleasure-oriented (M = 5.54, SD = 1.46) than participants in the utilitarian condition (M = 5.06, SD = 1.55; $F(1, 199) = 7.64$, $p < .01$). Lastly, there was a significant main effect of the consumption-goal manipulation on the problem-solving item such that participants in the utilitarian condition thought that getting the massage was more representative of action taken to solve a problem (M = 4.91, SD = 1.62) than participants in the hedonic condition (M = 3.49, SD = 1.79; $F(1,199) = 34.20$, $p < .001$). Neither the main effect of control nor the interaction between control and consumption goal on any of the three ratings was significant (p's > .23).

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Main Analyses. We hypothesized that low-control participants would be more eager to schedule the spa appointment in the utilitarian condition than baseline participants, and that there would be no difference in eagerness between low-control and baseline participants in the hedonic condition. To test this hypothesis, a two-way ANOVA with perceived control and consumption goal as independent factors was performed on the eagerness ratings. Supporting our hypothesis, results showed a significant interaction between perceived control and consumption goal ($F(1, 199) = 4.81$, $p < .05$; see figure 3). As predicted, a follow-up contrast analysis showed that within the utilitarian condition, low-control participants were significantly more eager to make the appointment ($M = 77.91$, SD = 24.48) than baseline participants ($M = 62.61$, SD = 29.92; $F(1, 199) = 7.35$, $p < .01$). However, within the hedonic condition, there was no difference in eagerness between low-control ($M = 65.63$, SD = 28.68) and baseline participants ($M = 67.91$, SD = 29.90; $F(1, 199) = .16$, $p = .69$). Neither of the main effects was significant (p's > .11).

Insert Figure 3 about here

Moderated Mediation of Eagerness Ratings by Problem-Solving Tendency. We predicted that problem-solving tendency would mediate the relationship between perceived control and eagerness ratings in the utilitarian condition but not in the hedonic condition. A moderated mediation analysis with 5,000 bootstrapped samples was conducted using model 8 of the PROCESS macro for SPSS to test this hypothesis (Hayes 2012). Results from the analysis revealed a significant moderated mediation ($B = 3.48$, with a bias-corrected 95% confidence interval that does not include 0 {.29, 9.48}). Within the utilitarian condition, the relationship

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between perceived control and eagerness ratings was mediated by problem-solving tendency (*B* = 2.29, with a bias-corrected 95% confidence interval that does not include 0 {.21, 5.90}). However, there was no mediation in the hedonic condition (*B* = -1.19, with a bias-corrected 95% confidence interval that includes 0 {-5.13, .45}).

In sum, results from study 4 replicated the basic effect of control deprivation on preference for utilitarian consumption. Most importantly, we found support for our hypothesized mechanism that control-deprived individuals desire utilitarian products because of their stronger problem-solving tendency (hypothesis 2).

GENERAL DISCUSSION

The hedonic-utilitarian typology of products is fundamental in marketing and consumer research (Dhar and Wertenbroch 2000). Therefore, it is important to understand the distinction between these two types of products and the psychological states that drive preferences for one type over the other. The current work demonstrates that perceiving a loss of control over the environment enhances desire for utilitarian products. An increased motivation for control led shoppers in a supermarket to purchase more utilitarian but not hedonic products (study 1). Participants who perceived a loss of control were also more likely to purchase a product (i.e., a pair of sneakers or cup of juice beverage) that was framed as utilitarian rather than hedonic (studies 2 and 3). Importantly, our empirical findings demonstrate that low-control consumers acquire utilitarian products because a perceived loss of control motivates these consumers to engage in problem solving, and utilitarian products are typically seen as solutions to everyday problems. Specifically, we found in study 4 that a generalized problem-solving tendency

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mediated the causal relationship between low control and eagerness to get a massage with a utilitarian goal.

Theoretical Contributions

Contributions to Consumer Research. By showing that control deprivation influences the type of products consumers purchase, the present research contributes to a still nascent stream of work that examines the impact of people's fundamental desire for control on consumer behavior (e.g., Cutright 2012). Our findings show that people compensate for their lack of control by purchasing utilitarian products because of these products' association with problem solving. As solving problems represents and involves taking control of situations in one's life, such behaviors reinforce self-perceptions of being able to attain desirable outcomes and prevent undesirable outcomes in one's environment (Duncker and Lees 1945; Landau et al. 2015).

Our work adds to prior research that has identified conditions under which utilitarian products are preferred (e.g., Dhar and Wertenbroch 2000; Okada 2005; Sela, Berger and Liu 2009). Much of this prior research points to the virtuous nature of utilitarian products (i.e., consuming utilitarian products is perceived to be more rational and induces less guilt than consuming hedonic products; Kivetz and Simonson 2002) as the underlying reason why utilitarian products are favored in various circumstances. Consumers faced with a larger assortment of products, for example, are more likely to choose utilitarian (vs. hedonic) products because these products are easier to justify (Sela et al. 2009). Our paper identifies another attribute (i.e., problem solving) of utilitarian products that makes them desirable. Furthermore, we uncover a new condition (i.e., loss of control) that would stimulate utilitarian purchases.

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Unlike Sela et al.'s research which demonstrates that having too many options (arguably a control-depriving situation) leads people to select the utilitarian option in the choice-set, we show that incidental manipulations of control that are unrelated to the choice context can also increase preference for utilitarian products.

Importantly, our research demonstrates the ecological validity of the effect by documenting how control motivation could affect shopping behavior in a real-world context; this empirical approach is especially essential given the pervasiveness and ease of using product acquisition as a means to cope with psychological threat. The use of different sample populations, product stimuli, shopping contexts, and dependent measures across studies also demonstrates the robustness and generalizability of the effect besides its external validity.

Contributions to the Literature on Control Motivation. As attested by earlier work (e.g., Inesi et al. 2011) and findings from our preliminary study, instead of sinking into a state of passivity and learned helplessness, individuals temporarily induced with a state of low control are often motivated to engage in problem solving. In addition, our research demonstrates how control deprivation could also prompt active attempts to acquire products (study 1). Although the notion that ownership can serve as a source of control has been acknowledged in the literature (Beggan 1991; Furby 1978, 1980), this relationship has not been tested empirically. Besides testing this relationship empirically in the present work, we also extend this literature by showing that specific types of products (i.e., utilitarian products) are more attractive under a loss of control. Through the acquisition of a utilitarian product that serves as a solution to an everyday problem, people reinforce their belief in their ability to attain desirable outcomes in the environment.

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Contributions to the Understanding of Control-Related Constructs. The causal relationship between control motivation and utilitarian-product acquisition documented in the current work enhances the conceptual understanding of other motivation-related constructs that are closely intertwined but not synonymous with the construct of control. In particular, power and autonomy are two constructs that are affiliated with control, and these constructs have also been studied in the domain of consumption.

(a) *Power.* Unlike a threat to one's sense of power, which triggers an increase in preference for high-status products (e.g., silk tie, luxury pen) that consequently help the individual derive respect from others (Rucker and Galinsky 2008), a threat to one's perceived control enhances desire for utilitarian products that satisfy the motive for problem solving. To test this distinction, we recruited 101 Mechanical Turk participants (54 male) aged 18–69 (M = 32.96, SD = 12.22) to first write about a low-control situation or a typical weekday and then choose between a hedonic pair of sneakers (label X) that was rated as superior in style but inferior in functionality, and a utilitarian pair of sneakers (label Y) that was rated as superior in functionality but inferior in style. The hedonic pair of sneakers was also assigned a higher overall consumer rating, while the utilitarian pair had a higher price. Supporting our prediction that control deprivation would enhance preference for the utilitarian pair of sneakers, we found that low-control participants were more likely to choose the utilitarian pair of sneakers than baseline participants (63.5%. vs. 40.8% respectively; $\chi^2(1) = 5.19$, $p < .05$) despite its lower overall rating and higher price. However, we also found that participants from both conditions, who rated the relative status of the two pairs of sneakers on a 7-point bipolar scale (1 = *the pair of sneakers from X has higher status*, 7 = *the pair of sneakers from Y has higher status*), similarly perceived the hedonic pair of sneakers (label X) to have higher status than the utilitarian pair of sneakers

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(label Y) (M = 2.51, SD = 1.67; $t(100)$ = -8.96, $p < .001$). In other words, low-control participants were not more likely to choose the hedonic pair of sneakers with higher perceived status, in contrast to powerless individuals who presumably would exhibit greater preference for high-status products (Rucker and Galinsky 2008). These results remained significant after controlling for perceptions of relative status across both pairs of sneakers and were replicated in a subsequent study.

Although control is a broader construct that encompasses power, and thus high-status products could theoretically compensate for one's lack of control (Inesi et al. 2011), it seems plausible that directly manipulating power would cause people to seek products that have immediate interpersonal implications, whereas manipulating control influences preference for products with immediate intrapersonal implications.

(b) *Autonomy*. Individuals who experience a threat to their autonomy tend to seek variety or unique products to assert their freedom in determining their own actions (Levav and Zhu 2009). Unlike control-deprived individuals such as those in our studies, these individuals are more concerned with the freedom to decide their own actions than whether those actions would lead to desired outcomes. Prior research has shown that people perceive a lower sense of freedom when choosing a product to satisfy a utilitarian (vs. hedonic) goal because they feel more compelled by extrinsic reasons to make the particular choice (i.e., "a choice feels less like a choice;" Botti and McGill 2011, 1068; B&G for brevity). A careful consideration of the conceptual distinction between autonomy and our focal construct of control helps reconcile the seeming contradiction between B&G's finding and the current research, which posits that consumers perceive utilitarian products to have a control-restorative function. In both sets of studies, participants had to consider options that would enable them to achieve a particular goal.

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However, in contrast to the studies in B&G in which participants were induced with a utilitarian goal while they were choosing between options, participants in our studies freely decided which products to buy or how much they wanted to buy a product given their differential degrees of motivation for control. Whereas control-deprived individuals in our studies focused on the prospect of problem solving associated with utilitarian products, participants induced with a utilitarian goal in B&G focused on the constraints imposed by the given instrumental motive as they made their choice.

In summary, motivations for power and autonomy are conceptually distinct from the motivation for control and thus engender different consumer preferences. Our findings therefore add to this burgeoning literature on the confluence of control, power, and consumption (e.g., Inesi et al. 2011) that seeks to understand how people might use consumption as a means to satisfy specific psychological needs. Importantly, unlike previous research in this area and within the larger sphere of compensatory consumption (which has largely been conducted in lab settings), we provide evidence that such compensatory behavior can occur in a real-world context, and with real buying behavior. Future research should further examine the relationships between control and these closely relevant constructs (e.g., by depicting these relationships in a visual concept map) and how these constructs can lead to divergent effects in other contexts.

Implications for Subjective Well-Being

Addressing the impact of control motivation on product acquisition is important given the prevalence of buying activities in everyday life. As attested by the current findings, consumers exposed to control-depriving situations in their daily lives may buy utilitarian products as a

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convenient and important means to satisfy their need for control. In study 1, participants incurred higher expenditures as a result of this greater spending on utilitarian products. Nonetheless, while prudent use of this strategy may be helpful for those who wish to enhance their momentary sense of control, and the purchase of utilitarian (vs. hedonic) products is less likely to be associated with guilt and regret (Khan et al. 2005), frequent use of buying as a strategy among people who often experience a lack of control over their environment (e.g., employees with unpredictable work schedules) may lead to overspending.

One question that arises from this research is whether control is indeed restored after acquiring utilitarian products. In a separate study that is not reported here, we employed a 2 (perceived control: low vs. high) × 2 (product type: utilitarian vs. hedonic) between-subjects design to test whether acquiring utilitarian (vs. hedonic) products helps control-deprived individuals restore their perceived control. Participants (N = 138; 40 male) from a northeastern university in the U.S., aged 18–40 (M = 21.61, SD = 3.69), were handed a $1 bill and a brown paper bag containing two products that were either hedonic (a pack of *M&M*'s chocolates and a bag of *Lays* Kettle Chips) or utilitarian (a box of metal clip binders and a gel-ink pen) at the start of the study. After completing the recall manipulation, they were instructed to open the bag and purchase one of the two products using the $1 bill. After this shopping task, participants rated on 7-point scales their momentary sense of control (1 = *no control at all*, 7 = *very high control*) and power (1 = *not powerful at all*, 7 = *extremely powerful*).

Results indicated a significant main effect of the control manipulation (M_{low} = 5.13, SD = 1.38 vs. M_{high} = 5.56, SD = 1.14; $F(1, 134) = 4.19$, $p < .05$), qualified by a significant interaction between perceived control and product type ($F(1, 134) = 4.45$, $p < .05$) on reported sense of control. Low-control participants who bought a utilitarian product reported greater perceived

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control than low-control participants who bought a hedonic product ($M_{utilitarian}$ = 5.49, SD = 1.20 vs. $M_{hedonic}$ = 4.77, SD = 1.48; $F(1, 134) = 5.72$, $p < .05$); the same difference was not significant among the high-control participants ($M = 5.47_{utilitarian}$, SD = 1.16 vs. $M_{hedonic}$= 5.66, SD = 1.13; $F(1, 134) = .37$, $p = .55$). In comparison, an analysis of participants' ratings of how powerful they felt did not produce any significant findings (p's > .17). Hence, results from this study provide preliminary evidence that the acquisition of a utilitarian product does heighten one's sense of control but not power for control-deprived individuals. In fact, low-control participants who acquired utilitarian products seemed to have restored their perceived control to levels similar to their high-control counterparts. The downstream consequences of consuming utilitarian products (and more broadly, problem solving) on one's perceived control constitute a promising area for future research.

Other Future Research Directions

Negative-Affect Regulation. In our studies, a perceived loss of control over the environment increased purchase of utilitarian products, and not hedonic products that are typically considered as more mood-lifting (Khan et al. 2005) and likely consumed as a form of emotion regulation. It is therefore unlikely that negative affect resulting from control deprivation was instrumental in driving the results. Nevertheless, it would be interesting to examine the interplay between control motivation and negative-affect regulation.

Negative emotions such as sadness and anxiety have been found to be associated with the appraisal of situational-control loss (Rick, Pereira, and Burson 2014; Smith and Ellsworth 1985). Yet sadness, for instance, has been shown to increase consumption of hedonic foods (e.g.,

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buttered popcorn and *M&M*'s; Garg and Lerner 2013; Garg, Wanskin, and Inman 2007). An intervention to boost control (via choice), however, eliminates the effect of sadness on hedonic consumption presumably because elevated perceived control from exercising choice counteracts the sense of helplessness related to sadness (Garg and Lerner 2013). Hence, it is possible that acquisition of utilitarian products or engagement in problem-solving behaviors, which have control-restorative functions, may also alleviate negative emotions associated with low control. In fact, some empirical evidence suggests that compared to individuals in a neutral mood, sad individuals are willing to spend more on items such as water bottles and highlighters, which tend to be more utilitarian than hedonic (Cryder et al. 2008; Lerner, Small, and Loewenstein 2004).

Given that the extant literature on affect regulation has focused on the impact of negative affect on hedonic consumption (e.g., "retail therapy;" Atalay and Meloy 2011; Lee 2015; Lee and Böttger 2016; Rick et al. 2014), it would be worthwhile to investigate the extent to which emotions generally associated with low control (e.g., sadness, fear, and anxiety) would also increase people's desire to engage in problem solving and acquire utilitarian products. Future research could also examine whether these emotions would be attenuated following such behaviors. For example, would individuals with chronic depression, who have a higher propensity to perceive themselves as lacking control (Mirowsky and Ross 1990; Nezu and Perri 1989), feel better after acquiring a utilitarian product or succeeding in problem solving? Additionally, it would be interesting to determine the conditions under which these emotions lead to stronger preference for utilitarian rather than hedonic products (e.g., personal competence as an integral part of one's self-identity vs. lay beliefs of indulgence as a form of mood repair).

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Related Means of Compensation. Another promising direction to explore pertains to the creation of new products (e.g., baking, art pieces, etc.). Insofar as the process of creating a product involves the perception of how one's actions can successfully produce a desired outcome, the product creator will experience the self as being effective in exercising control over the environment (Skinner 1996). In fact, the more skillful or capable the individual is at creating the object, the higher the level of control he or she would possess over the process and the outcome, and therefore derive greater satisfaction from control and mastery (Loewenstein 1999; Shapiro, Schwartz and Astin 1996). In the same vein, future work could examine whether control motivation influences people's desire to innovate and ideate. From a managerial perspective, Do-It-Yourself products such as baking mixes from *Betty Crocker* and stuffed animals from *Build-a-Bear Workshop*, as well as the concept of assembling one's own furniture developed by Swedish house products retailer *IKEA*, could leverage this notion of control in their marketing strategies (see also Norton, Mochon, and Ariely 2012).

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DATA COLLECTION INFORMATION

The first two authors jointly supervised the collection of data for study 1 by research assistants at Morton Williams Supermarket in New York in the summer/autumn of 2009. The first author collected the data for study 2 using Amazon's Mechanical Turk panel in the autumn of 2013. The first and third authors jointly supervised the collection of data for study 3 by research assistants at Fusionopolis Mall in Singapore in the summer of 2015. The first author collected the data for study 4 using Amazon's Mechanical Turk panel in the spring of 2016. The first author analyzed the data for all four studies.

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APPENDIX A

PRODUCT STIMULI FROM STUDY 2

Utilitarian pair of sneakers:

This pair of sneakers from label X is known for its functionality and craftsmanship. In particular, it features a solid non-marking rubber outsole for long-wearing traction and durability. X's signature emblem is found on the outer-side of these shoes.

Hedonic pair of sneakers:

This pair of sneakers from label X is known for its stylish and pleasing design. In particular, it features a sleek modern aesthetic and a beautiful contrast shade design. X's signature emblem is found on the outer-side of these gorgeous-looking shoes.

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APPENDIX B

PRODUCT STIMULI FROM STUDY 4



Utilitarian Ad Copy:

Beat heatstroke and dehydration with a glass of freshly-squeezed sugarcane juice. Besides its rehydrating and energizing properties, this nutritional beverage is known in many parts of Southeast Asia and South America to fight common infections and keep one's body healthy.

Hedonic Ad Copy:

Treat yourself by indulging in a glass of refreshing freshly-squeezed sugarcane juice! This tasty and delicious beverage that is popular in many parts of Southeast Asia and South America is served ice cold, and if you like, with a squeeze of lemon. Tastes like a vacation in paradise!

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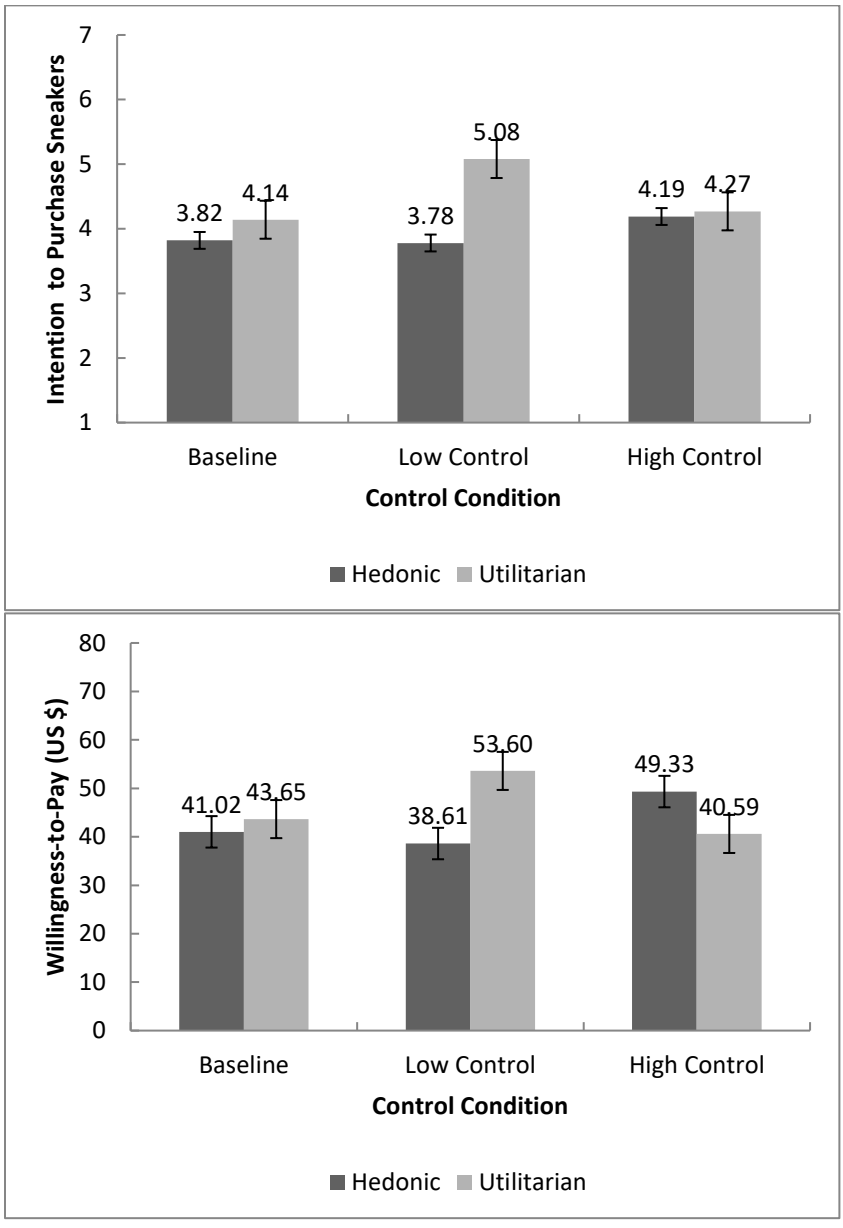
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FIGURE 1

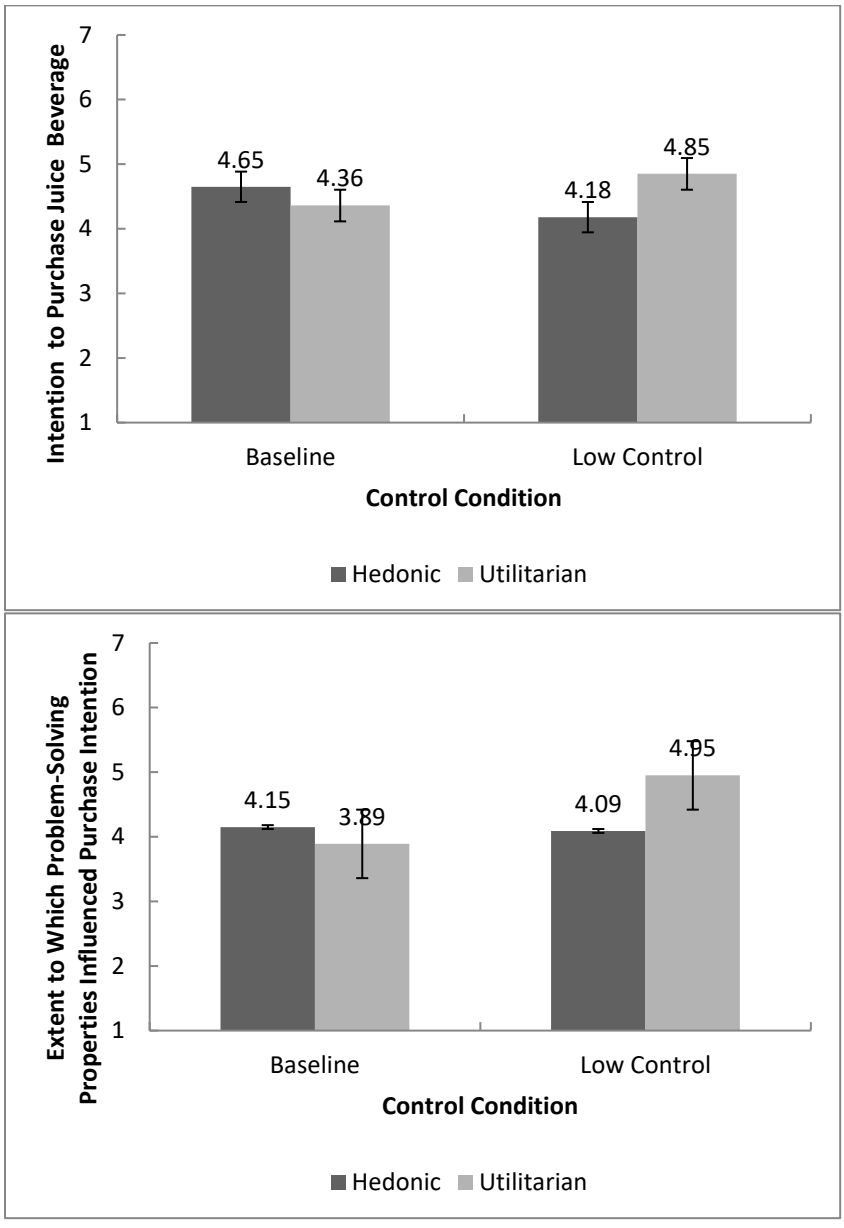
STUDY 2: INTERACTION BETWEEN PERCEIVED CONTROL AND PRODUCT TYPE ON INTENTION TO PURCHASE SNEAKERS (TOP PANEL) AND WILLINGNESS-TO-PAY (BOTTOM PANEL)



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FIGURE 2

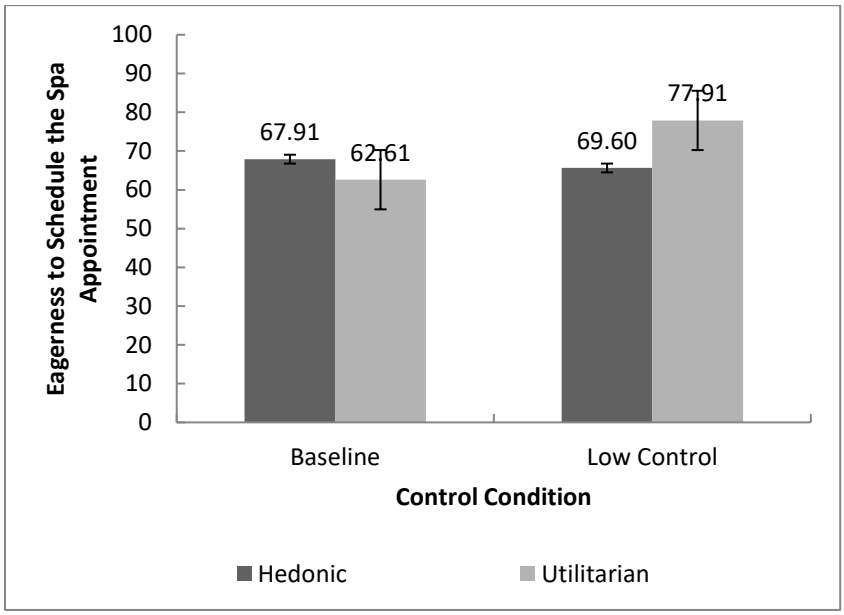
STUDY 3: INTERACTION BETWEEN PERCEIVED CONTROL AND PRODUCT TYPE ON INTENTION TO PURCHASE BEVERAGE (TOP PANEL) AND CONSIDERATION OF PROBLEM-SOLVING PROPERTIES IN DECISION (BOTTOM PANEL)



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FIGURE 3

STUDY 4: INTERACTION BETWEEN PERCEIVED CONTROL AND CONSUMPTION GOAL ON EAGERNESS TO SCHEDULE THE SPA APPOINTMENT



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2) Generalized Problem-Solving Tendency
1) PRODUCT ACQUISITION AS A COMPENSATORY STRATEGY FOR PSYCHOLOGICAL NEEDS
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1) STUDY 3: PURCHASING SUGARCANE JUICE
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2) Other Future Research Directions
3) Negative-Affect Regulation
3) Related Means of Compensation

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