

Love Leads to Action: Short-Term Mating Mindset Mitigates the Status-Quo Bias by Enhancing Promotion Focus

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We demonstrate that short-term mating (STM) mindsets lead individuals to a preference for action over inaction, thus violating the status-quo bias. We hypothesize, and provide supporting evidence through five experiments, that STM enhances one's promotion focus, which increases one's approaching tendencies and leads to the preference for actions against the status quo of affairs. This effect emerges independently of intrinsic product characteristics, such as the risk associated with gambling and investment decisions, and the signaling value of fashionable apparel. We also demonstrate that, for the STM mindset's effect on action-against-status-quo behavior to take place, individuals must construe choice sets in the light of default vs. non-default options, rather than mere side-by-side comparisons. Accordingly, upselling tactics and opt-in offers might be effective implementations of the findings of this research.

Keywords Advertising; Behavioral decision theory; Decision making; Evolutionary psychology; Gender effects and gender roles; Judgment

Extant literature in consumer psychology has documented the effect of the short-term mating (STM) mind-set on consumer behavior. A large portion of this literature studies the "peacocking effect," a set of impression management tactics aimed at creating a mating advantage for the individual applying them. For example, men with mating motivations flaunt their desirability with conspicuous purchases; women in or near ovulation are likely to opt for sexy and revealing clothing in order to outbid potential sexual rivals (e.g., Durante, Griskevicius, Hill, Perilloux, & Li, 2011; Griskevicius et al., 2007; Wang & Griskevicius, 2014). A review of studies on the peacocking effect reveals two recurring themes. First, it appears that the peacocking effect is particularly relevant to a limited set of products that are conspicuously related to specific mating advantages. Second, the various effects under the broad categorization of the peacocking effect reveal a collection of different tactics employed by men and women that were developed as a result of their

varying historic gender-specific assignments during the reproduction process.

In this article, we add to the extant literature by proposing an account that explains individuals' behavior change under STM beyond the paradigm of the well-established peacocking effect. Specifically, we propose that the activation of STM might mitigate, and in some cases reverse, the status quo bias, a prevalent bias under which an individual prefers the status quo as opposed to making changes to it (Anderson, 2003; Spranca, Minsk, & Baron, 1991). In the context of this study, we propose that STM affects one's regulatory focus, a process that, in contrast to the peacocking effect, can take place without the presence of an audience such as a potential mating partner or sexual rival. In line with prior research that found that regulatory focus can lead to violations of the status quo effect (Chernev, 2004; Liberman, Idson, Camacho, & Higgins, 1999; Roese, Hur, & Pennington, 1999), we propose that, once STM motivations are triggered, an individual's promotion focus is enhanced, leading to increased approaching tendencies that drive an individual to act against the current state of affairs. In support of this account, we demonstrate that, regardless of the implied mating advantage stemming from product to be purchased,

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the activation of STM may lead to a change in consumer preferences merely because a purchase may be construed as conforming to or deviating from the status quo, a finding that appears to be applicable to both men and women.

The contribution of our proposed theory to the preexisting understanding of the effect of STM is twofold: First, since the shift in regulatory focus results from one's internal goal orientation, the effect of STM on the reversal of the status quo bias is not restricted to conspicuous purchases that are intended to send a signal to an audience (i.e., a potential mate or sexual rival). Second, we identify a phenomenon of consumer behavior related to mating mind-set (specifically, STM) that may provide a unifying account of consumption under STM that is applicable to both genders.

In the next section, we examine two streams of research that provide a theoretical basis that supports the proposed account. First, we discuss the status quo bias, a widely observed phenomenon in which individuals often prefer the status quo of affairs and its ties to one's regulatory focus. Then we examine STM as a potential trigger in shifting one's regulatory focus and propose that one's promotion focus mediates the effect of STM on decision making by mitigating or reversing the status quo bias. In the process of providing evidence in support of our proposed account, we also contrast it with the conventional paradigm that predicts that sexual arousal induces risk-seeking behavior (Griskevicius et al., 2009; Li, Kenrick, Griskevicius, & Neuberg, 2012; Shanks et al., 2015). We do so by showing that the proposed effect takes place orthogonally to the risk factors underlying the product options.

Theoretical Framework

Status Quo Bias

The status quo bias refers to an individual's inflated preference for an option that does not require action (Anderson, 2003; Spranca et al., 1991). A typical example of the status quo bias can be illustrated by the vaccination experiment (Ritov & Baron, 1995). Participants in this experiment were presented with a scenario in which children were exposed to a type of fatal flu, while an inexpensive vaccine, which itself bore a very small chance of fatality, was available to the public to prevent the flu. In anticipation that fatality by natural causes (virus) was more bearable than that of human-made causes (vaccination), the majority of participants opted not to vaccinate their children (i.e., status quo).

Consistent with the status quo bias, field studies have also shown that individuals tend to be reluctant to rebalancing investment portfolios, even when they are aware that there are virtually no costs associated with changing the portfolio composition and that rebalancing funds decreases risk, as predicted by portfolio theory (Samuelson & Zeckhauser, 1988). This type of phenomenon is virtually indistinguishable from a phenomenon labeled as the "omission bias" in the consumer psychology literature. Thus, given that both phenomena are rooted in the idea of action avoidance (for a review, see Anderson, 2003), we follow the tradition of treating the two biases as a unitary phenomenon (Ritov & Baron, 1992) and refer to the behaviors associated with this phenomenon as "status quo" vs. "action" for the remainder of this manuscript.

The extant literature on status quo bias generally agrees that this bias stems from an aversion to anticipated regret (Anderson, 2003; Zeelenberg, van de Bos, van Dijk, & Pieters, 2002). Individuals feel greater levels of regret when unfortunate outcomes result from taking action than when identical outcomes result from status quo. Compared to maintaining the status quo, actions require further justification, increase an individual's perception of responsibility for the outcome, and are often deemed abnormal. As a result, when an outcome turns out unfavorably, individuals are more likely to experience self-blame (Baron & Ritov, 2004; Spranca et al., 1991; Zeelenberg et al., 2002; Zeelenberg & Pieters, 2007). This association between heightened regret and status quo bias is frequently replicated in the literature on counterfactual thinking (e.g., Gilovich & Medvec, 1995; Zeelenberg & Pieters, 2007). To illustrate, prior research has shown that consumers who are accustomed to repeated purchases are likely to experience regret when they switch to a different product (Inman & Zeelenberg, 2002). In turn, when decision makers expect to receive feedback about the outcomes stemming from their actions, they tend to refrain from actions to preempt potential regret (Ritov & Baron, 1995; Zeelenberg, 1999). For example, individuals are reluctant to sell endowed possessions, and when they do, they charge a higher price than they would pay to acquire the very same object (Zhang & Fishbach, 2005). This asymmetry is also attributed to the anticipation of regret. Relevant to this research, we propose that the counterfactual thinking that leads to status quo bias may be linked to an individual's prevention focus (Roese et al., 1999). According to regulatory focus theory (Förster, Higgins, & Idson, 1998), there are two styles of goal attainment.

The promotion focus centers on attaining positive goals by means of advancement and approaching; in contrast, the prevention focus centers on the absence of unwanted occurrences by means of avoidance and safeguarding.

The mental process underlying the status quo bias aligns with the prevention-focus goal attainment style described above. Roese et al. (1999) suggested that a status quo-biased individual is focused on preserving the current state of affairs, and when preservation fails, the individual is likely to generate counterfactuals that remove the actions responsible for the negative consequences. In a series of experiments, Roese et al. (1999) demonstrated that eliciting participants' promotion or prevention focus led to an increase in one's number of additive counterfactual thoughts (i.e., actions one could have taken that were omitted) or subtractive counterfactual thoughts (i.e., actions one had taken yet should have avoided), respectively.

In a similar fashion, Chernev (2004) proposes that when individuals are primed with a promotion focus, they become more enticed by potential gains in the future prospects and desensitized from potential losses. This proposition effectively suggests that a shift in one's regulatory focus may mitigate the loss-aversion prediction from the Prospect Theory (Kahneman & Tversky, 1979). As a result, Chernev (2004) concludes that this change in focus from losses to gains leads to a reversal of the status quo bias. This finding echoes another earlier finding that the endowment effect leads individuals primed with the promotion focus to show a stronger preference for the continuance of their course of action rather than switching to a different task, following interruptions (Liberman et al., 1999).

Chernev (2004) and Liberman et al. (1999) both point to the likelihood that one's regulatory focus affects one's disposition toward the status quo. At the same time, taking into consideration the work of Roese et al. (1999), we add that this effect takes place not only as the result of a change in one's sensitivity toward the gains and losses in future prospects, but also because of a change in one's assignment of responsibility stemming from regret management. Next, we discuss the relationship between STM and the change in one's regulatory focus, which eventually leads to the mitigation of the status quo bias.

Short-Term Mating

STM can be conceptualized as a search process in which men and women engage in short-term

dating rituals as a sampling practice to gather information about potential mating prospects and form a consideration set that could be later used for more scrutinized vetting if they transition into a long-term mating mind-set. In this search process, one tends to emphasize quantity over quality and therefore focus more attention on discovering merits in potential partners than safeguarding against shortcomings (Buss, 1994; Buss & Schmitt, 1993; Schmitt, Shackelford, & Buss, 2001). In line with this proposition, both men and women primed with STM are known to have higher variety-seeking tendencies than their intra-sex counterparts without the priming (Chen, Zheng, & Zhang, 2016).

Error Management Theory supports the notion that STM may lead to a shift from prevention to promotion focus. This theory suggests that, when the motivation to gain immediate access to sex dominates, one is increasingly willing to accept false-positive identification (type I error) rather than false-negative identification in mate selection. For example, men with short-term mating goals often overestimate women's sexual intent toward them, because the cost of failed sexual pursuits, such as lost time and wasted courtship effort, is fairly low in comparison to the missed opportunity of immediate access to sex (Haselton & Buss, 2000). Similarly, albeit women are more vigilant in avoiding undesirable traits in potential mates (i.e., "deal breakers") than their male counterparts, empirical evidence supports the notion that women are generally more tolerant of deal breakers when in an STM mind-set rather than when in a long-term mating (LTM) mind-set as well (Jonason, Garcia, Webster, Li, & Fisher, 2015). Given that a promotion focus elicits eagerness and prevention elicits vigilance, promotion focus would be a better fit for a search-and-sampling process such as the one triggered by STM. In support of this claim, research has shown that promotion-focused individuals tend to process information more globally and abstractly, and consequently have larger consideration sets in the search process (Pham & Chang, 2010; Pham & Higgins, 2005).

Consistent with our proposition that STM is a promotion focus-driven search process, previous consumer research on the topic of STM has documented examples in which men and women favor the use of abstract and easy-to-access cues as selection criteria without much regard to the downside exposure to such cues. First, physical appearance is one of the primary factors used by individuals in STM. Men in such a state are quick to be attracted to beautiful women although physical fitness is not

entirely indicative of her capacity of being a long-term companion or parent. Meanwhile, women in an active STM state favor wearing sexually revealing clothing as an attraction tactic at the risk of unwanted- sometimes dangerous- attention, some of which they would not be able to physically deter (Buss & Schmitt, 1993; Durante et al., 2011). Similarly, men in STM are known to flaunt conspicuous purchases to signal wealth, often at the expense of their economic well-being; women in STM tend to be interested in the potential of immediate resource extraction, and therefore are often drawn to men who are quick to part with their wealth, even though frivolous spending in itself is a signal that a man could be promiscuous, which is an undesirable quality in a long-term partner (Buss & Schmitt, 1993; Griskevicius et al., 2007). In sum, both men and women in an STM state tend to rely on shallow but immediately visible cues when assessing the fit of mating partners to increase their chance of success in the mate search, a behavior consistent with the promotion focus.

In sum, we argue that, when an STM state is activated, individuals adapt to attract many potential mating prospects into their consideration set for later vetting. During this process, individuals primarily envision success and strive to maximize the chance of hits at the cost of reduced vigilance against the negative outcomes of their own actions. Therefore, we hypothesize that STM is likely to trigger a promotion focus. Reflecting on the discussion regarding regulatory focus and the status quo bias presented earlier, we also hypothesize that a promotion focus mitigates the status quo bias that is commonly observed otherwise, leading people to take action rather than accept a default option (status quo) assigned to them.

We provide empirical support for our hypotheses in five experiments. Experiment 1 demonstrates the basic phenomenon that STM is associated with a higher likelihood of individuals deviating from the preset defaults. The results also illustrate that the proposed effect is orthogonal to the previously documented risk-seeking behavior triggered by a mating mind-set. Next, we explore the prediction that STM influences regulatory focus, which in turn affects one's tendency to take action. To this end, experiment 2 uses additive and subtractive counterfactual thoughts as proxies for promotion and prevention foci, respectively, and showcases the downstream effects of the change in regulatory focus on behavioral disposition. In experiment 3, we demonstrate that, if we mitigate the effect of STM on one's regulatory focus, the downstream

effect of action-taking diminishes. In experiments 4 and 5, we demonstrate the practical applications of the current research in the contexts of respondents' scenario-based product choices and the actual disposition to survey participation.

Experiment 1

Experiment 1 was designed to provide evidence that individuals in an active STM state are more likely to take action rather than omit action, a behavior that is in direct opposition to the status quo bias, than those who are not in such a state. This experiment also makes the important distinction that the phenomenon investigated in the current research relates to the action vs. status quo in decision making rather than the well-documented risk-taking behavior under STM (Griskevicius et al., 2009; Li et al., 2012; Shanks et al., 2015). The STM-induced risk-taking behavior is intimately related to the nature of the products or objects in question, as these objects signal the qualities of generosity, fertility, and nurturing (Durante et al., 2011; Sundie et al., 2011). In contrast, the mitigation of the status quo bias previously discussed does not rely on any specific intrinsic quality of the target object to take place. In fact, in experiment 1, we demonstrate that action (vs. status quo), induced by an STM state, is orthogonal to the underlying risk factors of the options available.

Participants

We recruited 213 participants of age 35 or younger through Amazon Mechanical Turk (114 female). This censoring produced a sample demographic that is consistent with the age group used in recent publications studying related topics (Durante & Arsena, 2015; Griskevicius et al., 2007; Wang & Griskevicius, 2014). Participants' age was screened by collecting information about several demographic variables such as time zone, education level, income, age group, and gender. Participants were aware that a screening procedure was in place but were unaware of which variable, or combination of variables, determined their eligibility for the main task. Only participants who identified themselves as being a member of the age group 18–25 or 26–35 were retained for the main experiment. Participants who did not fit the criteria were thanked, paid a small reward for participating in the screener, and dismissed. This age-based prequalification was implemented as a practical concern

related to the manipulation. Since STM mind-set rather than a general mating mind-set is our targeted manipulation, we presumed that older participants who have been in longer-term relationships are as easily susceptible to the priming of a STM mind-set. Rather than filtering participants based on relationship status, which could lead to endogeneity issues given the nature of our manipulation, we implemented an age-based prequalification as a safer compromise.

Design and Procedure

The experiment used a 2 (mind-set: control vs. STM) $\times$ 3 (default option: hit vs. stay vs. control—no default) between-subjects design. Participants were told that the survey consisted of multiple sections regarding consumer choices and preferences. They were randomly assigned to one of the six conditions and then played a series of Blackjack card games, which, as described below, was used to capture their willingness to take action vs. not taking action.

STM Activation

Scenario-based guided imagination has been a popular method to elicit mating motives in past research (Griskevicius, Goldstein, Mortensen, Cialdini, & Kenrick, 2006; Li et al., 2012). Since it has been noted in the past that various types of romantic scenarios would yield subtle difference in the short-term vs. long-term nature of the relationship (Griskevicius et al., 2007), we constructed our manipulation in a context of first-time blind date since the focus of the current study is STM rather than a general mating mind-set. A similar procedure has proven to be effective at producing mating mind-sets with short-term orientation (Chen et al., 2016). In the current experiment, participants were asked to imagine that they had been single for the past three months and were about to go on a blind date that a friend had set up for them. For 30 s, they were asked to imagine a very desirable person to meet on the date. On the next screen, pictures of three attractive models of the sex opposite to that of the participant were shown, and participants were asked to select the picture that best resembled the person they had imagined. Participants were then asked a series of multiple-choice questions regarding their preferences related to a date, such as dress code and conversation style.

Participants in the control group were given a similar assignment, but were asked to imagine a

vacation scenario with no obvious connection to dating or other romantic situations. They were asked to picture a very desirable vacation and to choose one of the three pictures of vacation destinations that was the closest to the one they imagined. Participants then answered questions regarding their preferences regarding vacations.

Blackjack Game Task

The dependent measure was based on participants' decisions during a series of card games that followed the priming of neutral-vs.-STM states. Participants were invited to play a simplified version of the card game Blackjack. Each participant was presented with 20 pairs of cards on the computer screen, one pair at a time, and was asked to indicate whether he or she chose to add another card (i.e., "hit") or not (i.e., "stay") on each hand. The goal was to have the final sum of cards in each hand as high as possible without exceeding 21 points. A hand of cards adding up to more than 21 points was considered a "bust" and yielded zero points. Ten pairs of cards, each adding up to 14, 15, or 16 points (e.g., a 6 of hearts and a Jack of spades), constituted the main decision task, given that even the most skilled Blackjack players face a "hit" or "stay" dilemma when such pairs of cards are drawn (Baker & Maner, 2008; Galinsky, Gruenfeld, & Magee, 2003). To reduce suspicion about the task, another ten pairs of cards were dealt as filler hands. Each of the filler hand had cards adding up to less than 10 points (e.g., a 3 of diamonds and a 5 of hearts) or more than 18 points (e.g., a 10 of spades and a Queen of hearts), in which case the optimal decision would be, respectively, to "hit" or to "stay." The order in which the 20 hands of cards (10 hands of cards as focal decisions and 10 filler hands) were presented was randomized. Any time the participant chose the "hit" decision, the third card was not revealed to prevent any potential bias carried over to subsequent decisions (Zeelenberg et al., 2002). All participants were given a passing score after all 20 hands were dealt and played, making them eligible for full participation regardless of their actual "hit" or "stay" decisions.

Default Conditions

The default conditions were manipulated with different input methods on the computer screen. Approximately one-third of the participants were randomly assigned to the condition in which the default was "hit," whereas another third of the

participants were assigned the condition in which the default was “stay.” For every pair of cards presented, participants in the hit-default (stay-default) condition were told that, by default, the system automatically assumed the decision was (not) to add another card, and the text-input dialog box on the screen was prefilled with the word “hit” (“stay”). To accept the default choice of “hit” (“stay”), participants had to simply hit the “Enter” key on their keyboard. To reverse the default choice and make the decision to “stay” (“hit”), participants had to delete the prefilled word in the text-input dialogue box and type in the word “stay” (“hit”) instead. The last third of participants was assigned to the control group and was not given a default option. For every pair of cards, these participants were asked to indicate their hit/stay decision by selecting the radio button with their “hit” or “stay” decision, as in most conventional online surveys (see Appendix A for a sample screenshot).

Manipulation Check

After completing the card games, participants reported the extent to which they had experienced (a) romantic arousal, (b) sexual arousal, (c) a desire to have a romantic partner, and (d) a desire to have others attracted to them (Griskevicius et al., 2007). Responses were recorded on 7-point Likert scales ranging from “not at all” (1) to “very much” (7).

Results and Discussion

Manipulation Check

An ANOVA on the composite average score of the four manipulation check measures ($\alpha = 0.91$) confirmed that the priming procedure successfully produced different levels of STM across the treatment and control groups ($M_{STM} = 3.68$, $M_{control} = 2.71$; $F(1, 209) = 16.17$, $p < .01$). No difference in mind-set states was observed across genders ($F(1, 209) = 0.96$, *n.s.*), and the gender variable did not interact with the mind-set-priming conditions either ($F(1, 209) = 1.49$, *n.s.*).

Risk-Taking Vs. Action

We first tested whether participants’ decisions under STM were merely a function of risk-seeking behavior. We set the number of “hit” decisions made by participants as the dependent measure and analyzed the data in a 2 (mind-sets: STM vs. control) $\times$ 3 (default: “hit” vs. “stay” vs. none) $\times$ 2

(gender: males vs. female) ANOVA. Results revealed a significant interaction between the mind-set and the default factors ($F(2, 201) = 18.69$, $p < .01$, see Figure 1). In the condition in which “hit” was set as the default option, participants who were primed with the dating scenario were less likely to “hit” compared to their counterparts, who were primed with the vacation scenario ($M_{control} = 7.90$, $M_{STM} = 3.93$; $F(1, 201) = 30.74$, $p < .01$). The opposite was observed in the condition in which “stay” was given as the default option ($M_{control} = 4.24$, $M_{STM} = 6.39$; $F(1, 201) = 9.26$, $p < .01$). However, no significant difference was observed across the mind-set-priming conditions in the control condition of the default-specification factor in which participants were free to choose their card decisions without predefined default options ($M_{control} = 7.32$, $M_{STM} = 5.91$; $F(1, 201) = 3.37$, *n.s.*). Had STM led to an overall risk-seeking behavior, we would have seen the main effect of STM leading to a higher likelihood of hits played by the participants, as the hit option is commonly deemed riskier for pairs of cards in the 14- to 16-point range (Baker & Maner, 2008). We did not observe this effect, but instead, STM participants’ decisions varied based on the default option presented to them. Overall, these results indicate that STM induced action against the default behavior, and this effect is likely unrelated to the risk factors associated with each option.

The gender variable neither produced a main effect nor interacted with other variables in the model. A re-specified model without the gender variable did not show meaningful changes in the results reported above. Although numerous previous studies have reported on trait differences between men and women (for a review, see Meyers-Levy & Loken, 2015), it is not surprising that we observe that they share a similarity in behavioral change once the STM is successfully activated since it is a situational effect. Indeed, we are encouraged by the robustness of the effect as the predicted phenomenon was not overshadowed by the difference in the propensity of men and women to be primed the STM mind-set.

We also examined how participants played the filler hands. All participants made correct choices (e.g., hitting when dealt a 3 or a 5, and staying when dealt a pair of Queens) in at least six of the ten filler hands ($M = 9.71$, $SD = 0.678$), implying that they all had understood the rules of the game and played it attentively. This result did not vary as a function of the default condition ($F(2, 201) = 0.61$, *n.s.*), the mind-set condition ($F(2, 201) = 0.92$, *n.s.*), or their interaction ($F(2, 201) = 1.27$, *n.s.*).

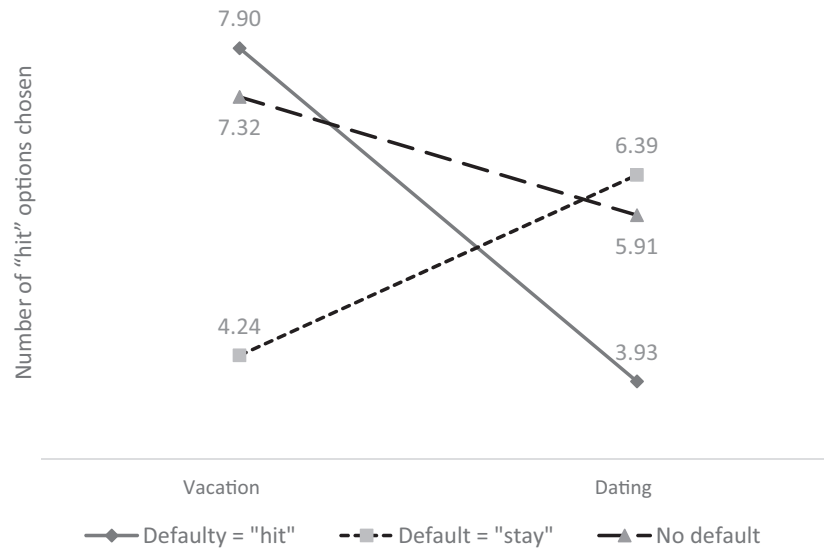


Figure 1. Number of "hit" decisions chosen as a function of mind-set manipulation and default conditions

STM and Action Against the Default

To test for the predicted action-against-default phenomenon under the influence of STM, we focused the analysis on the subset of participants who received "hit" or "stay" as the default condition (150 participants). We re-coded the data in terms of the number of "actions" taken, defined as the number of times participants chose to deviate from the assigned default option by erasing the assigned answer and retyping the alternate option. A 2 (mind-set: STM vs. control) $\times$ 2 (default replicate: "hit" vs. "stay") ANOVA revealed that participants in the STM condition were indeed more likely to take action and deviate from the assigned default than their counterparts in the control mind-set condition ($M_{\text{STM}} = 6.21$, $M_{\text{control}} = 3.19$; $F(1, 146) = 34.39$, $p < .01$). The default replicate factor did not interact with the mind-set-priming condition ($F(1, 146) = 3.37$, $n.s.$).

The results from experiment 1 supported our hypothesis that an STM state leads to a greater likelihood of one taking action against an assigned default option. Specifically, participants were more likely to take action and replace the default option when STM was activated relative to when this mind-set was not activated. The results of experiment 1 also helped to refute the alternative explanation that STM leads to risk-seeking behavior. If STM priming had triggered risk-seeking behavior, participants would have consistently preferred the "hit" option, given that risk-seekers should be willing to bear the risk of a "bust" in exchange for the chance of a higher

score on each hand. However, this phenomenon was not observed in experiment 1, as participants in the control condition did not show any bias one way or the other when primed with the dating scenario; moreover, those in the hit-as-default condition even behaved in the opposite direction of the risk-seeking prediction. Therefore, the results in experiment 1 were consistent with the notion that one's preference for actions under the influence of STM should not be confused with risk-seeking behaviors. In fact, the effect of the STM manipulation on participants' "hit" or "stay" decisions were only observed when a default was preassigned, in which case the participants consistently chose the options that deviated from the default.

Experiment 2

Experiment 2 was designed with two goals in mind. First, we wanted to replicate the findings from experiment 1 that one's product choice may alternate under STM depending on the framing of the default position. Second, as previously shown that an additive counterfactual (regret over opportunities forgone) is associated with promotion focus and a subtractive counterfactual (regret over actions taken) is associated with prevention focus (Roese et al., 1999), we use the cause of regret as a proxy measure for regulatory focus to demonstrate that the shift in regulatory focus is the underlying process for the mitigation of status quo bias under STM.

Participants, Design, and Procedure

One hundred and eighty-seven participants aged 35 or younger were recruited through Amazon Mechanical Turk, using the screening process that we used in experiment 1 (104 female). The experiment was a 2 (mind-set: control vs. STM) $\times$ 2 (default: stocks vs. bonds) factorial design. The mediating variable, anticipated cause of regret, was measured after the completion of the mind-set-priming task, which was identical to that of experiment 1 and before participants answered questions regarding their investment decisions. The mind-sets were manipulated between-subject using the same procedure used in experiment 1.

Financial Decision Making

The financial decision-making task was adapted from previous research related to status quo bias (Samuelson & Zeckhauser, 1988). Participants were given the following scenario:

Pat recently received a sizable trust fund from her late grandfather. She contemplated between two viable investment options for the trust fund. On the one hand, US stocks gave an annual return between 5% and 9% in the past years; on the other hand, comparable corporate bonds usually guarantee an annual return of 7%.

The default investment option was manipulated between-subject. Approximately half of the participants were told that Pat's grandfather had kept the funds invested in stocks for the past 30 years, whereas the remaining participants were told that her grandfather had kept the funds invested in corporate bonds.

Next, participants were asked to consider two scenarios. In the no-action scenario, participants were told that Pat left the trust fund in the same investment instrument that her grandfather had used to invest his money, but it turned out that this decision yielded an annual return 2% lower than the forgone option over the next five years. In the action scenario, Pat switched the investment from the instrument her grandfather had used to the other instrument available. Again, this investment decision yielded an annual return 2% lower than the original option over the next five years. Thus, in both scenarios, Pat's investment underperformed in comparison to the forgone option, with the only difference being the lower financial performance stemming from either inaction in the first scenario

or action in the second scenario. Participants indicated which scenario would make Pat feel greater regret using a 101-point sliding scale, ranging from "0—definitely more regret in scenario A (no-action)" to "100—definitely more regret in scenario B (action)." Following this measurement, participants were asked whether they would choose stocks or corporate bonds if they had to maintain the entire trust fund in only one of the investment options. This choice was the key-dependent measure.

Results and Discussion

As in experiment 1, we first analyzed the propensity for risk-seeking behavior, given that stocks were manipulated to be a riskier option, in line with the real-life marketplace. To this end, we regressed the participants' preference for investment, coded as a binary variable [chose stocks: yes (1) vs. no (0)], on the mind-set factor and default investment factor using a binary logistic model. The results revealed an interaction between the mind-set factor and default investment conditions (Wald $\chi^2(1) = 7.59$, $p < .01$, see Figure 2). We observed status quo bias from participants assigned to the control mind-set condition (i.e., vacation scenario). Participants were more likely to keep the inherited money in stocks when the grandfather left the funds invested in stocks than when grandfather left the funds invested in corporate bonds ($M_{\text{default_stocks}} = 0.51$, $M_{\text{default_bonds}} = 0.11$; Wald $\chi^2(1) = 21.25$, $p < .01$). Status quo bias was mitigated for participants primed with STM ($M_{\text{default_stocks}} = 0.30$, $M_{\text{default_bonds}} = 0.27$; Wald $\chi^2(1) = 0.08$, *n.s.*). Within the stocks-as-default condition, participants primed with an active STM were less likely to keep the investment in stocks compared to their counterparts not primed with STM ($M_{\text{STM}} = 0.30$, $M_{\text{control}} = 0.51$; Wald $\chi^2(1) = 4.20$, $p < .05$). Within the bonds-as-default condition, participants primed with STM were more likely to reinvest the funds in stocks compared to their counterparts not primed with STM ($M_{\text{STM}} = 0.27$, $M_{\text{control}} = 0.11$; Wald $\chi^2(1) = 4.50$, $p < .05$).

When presenting the stock and bond conditions in experiment 2, we ensured that stocks were unambiguously riskier than bonds, whereas the expected value of both instruments remained the same. If the activation of the STM state had increased the participants' risk tolerance, we should have observed a systematic bias toward stocks. The fact that participants who received the STM priming did not show a heightened interest in the stocks, as compared to their counterparts in the control condition, suggests that an STM state might

not alter one's value function regarding risk and reward. Nonetheless, we showed that participants' investment decisions were more consistent with the prediction of the action-against-default paradigm, in that an individual primed with an active STM state was more likely to reverse the course of action set as the default, regardless of the particular specification of that default condition.

STM and Action Against the Default

To further investigate preference for action over inaction under STM, we reran the above analysis after collapsing the data across the default instrument conditions (stocks vs. bonds) and recoding participants' decision into a new binary variable based on whether participants took actions reverting the status quo of the investment option as inherited [yes (1) vs. no (0)]. Overall, we observed that participants primed with an active STM state were more likely to take an action that deviates from the default investment instrument than their counterparts in the control condition ($M_{STM} = 0.45$, $M_{control} = 0.30$; $\chi^2(1) = 4.36$, $p < .05$). We note that the high interest rate assigned to the bonds investment (7%) provided a stringent test of our hypothesis, given that this alternative created a disincentive to switch to a riskier option for which the upside is only 2% more. Consistent with this assumption, we observed that participants who received bonds as the default instruments were less likely to take action when compared to those who were given stock as the default instrument in general ($M_{default_stocks} = 0.59$, $M_{default_bonds} = 0.20$; $\chi^2(1) = 29.46$, $p < .01$).

However, the default investment factor did not interact with the effect of STM driving an action against the default (Wald $\chi^2(1) = 0.08$, *n.s.*).

Mediation Analysis

Next, we examined the anticipated cause of regret as the mediating mechanism for the reported phenomenon using the additive counterfactual (regret over opportunities forgone) as a proxy for promotion focus (Roese et al., 1999). Again, we collapsed the dependent variable across the default investment conditions into the binary measure of whether the participant took action (i.e., chose the investment instrument different from the assigned default). Using a bootstrapping mediation analysis procedure (Preacher & Hayes, 2004, 2008; Zhao, Lynch, & Chen, 2010), we observed the total effect of STM on participants' likelihood to take action [10,000 sample bootstrapping, *c* path, $\beta = 0.64$, $SE = 0.31$, $p < .05$, $CI (0.04, 1.24)$, see Figure 3]. Specifically, participants primed with STM showed a greater level of regret toward unfavorable outcomes stemming from forgone opportunities than from outcomes stemming from action [a path, $\beta = -11.02$, $SE = 5.23$, $t(185) = -2.11$, $p < .05$, $CI (-21.34, -0.70)$]. In turn, higher anticipated regret over forgone opportunities was associated with the increased likelihood to take action against the default investment options [b path, $\beta = -0.01$, $SE = 0.00$, $p < .01$, $CI (-0.02, -0.01)$]. Overall, the mediated effect of an STM state on action taking via anticipated regret was statistically significant [ab path, $\beta = 0.15$, $SE = 0.09$, $CI (0.02, 0.39)$]. After

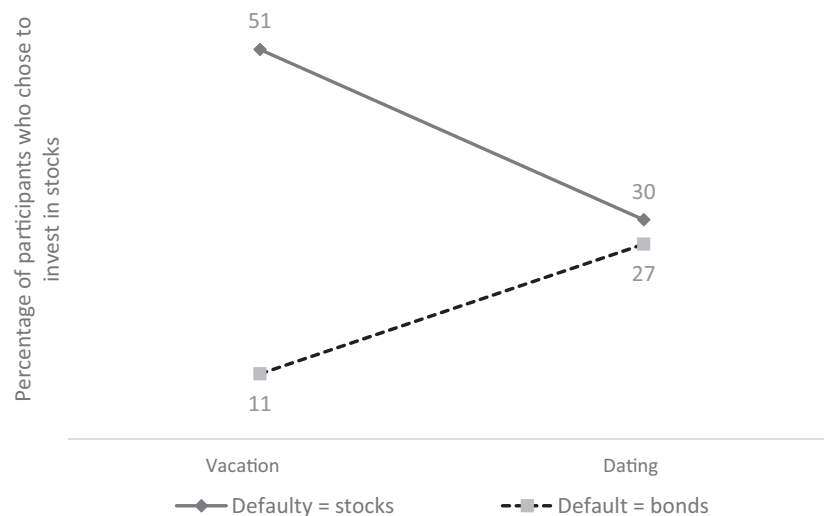


Figure 2. Percentage of participants who chose to invest in stocks as a function of motivation manipulation and default conditions

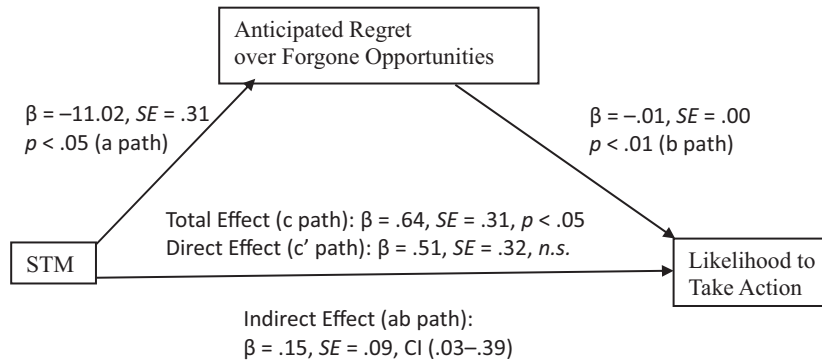


Figure 3. Mediation model for the effect of STM on participants' likelihood to take actions via a shift in the cause of regret

controlling for the mediated path, we no longer observed a statistically significant direct effect of the mind-set factor on action-taking behavior [c' path, $\beta = 0.51$, $SE = 0.32$, $n.s.$, $CI (-0.11, 1.13)$].

The results from experiment 2 are consistent with the claim that participants primed with an STM were more likely to take action and reinvest in stocks or corporate bonds, depending only on the default investment options set by the inheritance, even though stocks were generally considered to be a riskier financial instrument than bonds. Importantly, since additive counterfactual (regret over opportunities forgone) can be viewed as a proxy for promotion focus (Roese et al., 1999), the results above are consistent with the hypothesis that the relationship between STM and reversal of status quo bias is facilitated by the change in one's regulatory focus.

These results also complement the findings of Zhou and Pham (2004), in which participants primed with a promotion focus preferred stocks as an investment opportunity whereas those primed with a prevention focus preferred the less volatile mutual fund option. We notice that the original (default) allocation of the inheritance was not specified in the experimental conditions in the case of Zhou and Pham (2004) and the effect was facilitated by the risk factors embedded in the investment options. As seen in experiment 1 of the current research, the status quo bias is likely more prominent at affecting an individual's choices than the risk factor. As seen in experiment 2, this effect from Zhou and Pham (2004) was mitigated by the status quo bias as a result of the default allocations of funds being already invested in stocks or bonds at the time of inheritance, and the interaction between STM turned out to be a stronger determinant of choices in this case. Given that there are likely multiple situations in which status quo effect-related phenomena are interpreted as risk-related

phenomena, properly identifying the nature of the status quo effect and its boundary conditions could prove to be an effective way of improving marketing effectiveness. The next three experiments were designed with this purpose in mind.

Experiment 3

Experiment 3 was designed to provide further evidence that the relationship between STM and the mitigation of status quo bias is facilitated by the change in regulatory focus. Among the various potential psychological processes that can be triggered by the priming of STM, we have posited that heightened promotion focus leads to the mitigation of the status quo bias. If this is indeed the mechanism driving the phenomenon we observed in experiments 1 and 2, the effect should be mitigated if one can reverse the heightened promotion focus. Therefore, in the context of the current research, if a participant is made aware that his/her mind-set has been tampered with by an event irrelevant to the subsequent task (i.e., STM manipulation), reactance should take place and any change in behavioral outcome (e.g., tendency to take action) should diminish. We test this hypothesis in experiment 3.

Participants, Design, and Procedure

One hundred and ninety-three participants aged 35 or younger were recruited through Amazon Mechanical Turk using the same screening process in experiment 1 (93 female). The experiment was a 2 (mind-set: control vs. STM) $\times$ 2 (attention redirection: yes vs. no) between-subject design. The STM mind-set was manipulated using the same procedure used in experiments 1 and 2.

Attention Redirection

After the mind-set-priming tasks, participants in the attention redirection condition answered a subset of questions from the Regulatory Focus Questionnaire (RFQ) measuring one's promotion focus (Higgins et al., 2001). They then rated on a 7-point Likert scale the extent to which they agreed that the (date or vacation) scenarios at the beginning of the survey (i.e., mind-set-priming tasks) affected their response to the RFQ. We implemented this question as the key manipulation in this experiment, making participants not only aware that their mind-set may have been tampered with, but also that the tampering is closely related to the issues reflected in the questions of the RFQ.

Participants in the control condition did not receive these questions, but instead performed an unrelated filler task of approximately equal length.

Dependent Measure

All participants answered questions regarding an imaginary shopping scenario. Participants were told that one of our laboratory assistants was graduating from the Ph.D. program and faced a dilemma in shopping for the academic regalia. A standard version of the regalia, priced at \$600, which followed the North American tradition of academic dress code, was a black robe featuring dark blue velvet arm patches and gold-accented front facings (See Appendix B). The graduating laboratory assistant also had the option to order the special version regalia priced at \$750, which featured the alma mater's unique theme color as well as embroidered university logo emblems on the front facings.

Participants were asked to indicate on a 7-point Likert scale how likely they would be to purchase the special version regalia instead of the standard version if a wealthy relative offered to sponsor the cost of either regalia. Then the participants estimated the percentage of all Ph.D. graduates from the university this year who would opt for the special version regalia on a sliding scale from 0 to 100. They also compared the esthetics of the two regalia on a 7-point Likert scale, with 1 being "the standard version is definitely better looking" and 7 being "the special version is definitely better looking."

Results and Discussion

We first examined participants' evaluation of the product options. On average, participants estimated

that roughly 27% ($M = 26.88$) of the graduating PhD candidates would order the special version regalia, a percentage that was significantly lower than 50% ($t(192) = -14.08, p < .01$). They also considered the standard version regalia to be better looking than the special version relative to the midpoint of the scale ($M = 3.19; t(192) = -5.11, p < .01$). Thus, the standard version of the regalia tends to be perceived as the default option by the participants. Also, if a participant had opted for the special version regalia, this inclination should be orthogonal to the peacocking effect, as previously documented (Sundie et al., 2011), since the participants in the study perceived it as less attractive.

Next, we examined whether redirecting one's attention to the cause of promotion focus might attenuate the relationship between STM and action taking. An ANOVA revealed an interaction effect between STM and the attention redirection procedure on one's product choice ($F(1, 189) = 5.21, p < .05$, see Figure 4). Specifically, the basic findings from experiments 1 and 2 were replicated in the group without the attention redirection procedure, as participants in the STM condition showed greater interest in ordering the special version regalia than those without ($M_{STM} = 3.96, M_{control \text{ mind-set}} = 2.96; F(1, 189) = 5.65, p < .05$). However, in the group that underwent the attention redirection procedure, this difference was not observed ($M_{STM} = 2.86, M_{control \text{ mind-set}} = 3.22; F(1, 189) = 0.73, n.s.$).

To summarize, in experiment 3 we used a regalia purchase scenario to test the hypothesis that participants' attention to the potential shift in regulatory focus induced by the earlier priming task mitigates the act-against-default bias. Results confirmed that the special version regalia were indeed viewed as more atypical but less attractive than the standard version regalia. Therefore, as we observed an increased preference for the specialty regalia by participants with an active STM state in the attention control group, this effect should be independent of the peacocking effect. The results in experiment 3 also point to an important potential practical marketing implication stemming from the predicted effect: consumers primed with STM might be interested in novelty/special-edition products not because of the fashion-related value of the product, but because the act of purchase being non-conforming to cultural or societal norm is consistent with the STM mentality. This finding again indicates that the action-against-status quo effect caused by the STM hinges on the consumers perceiving the contrast between nondefault vs. default behavior,

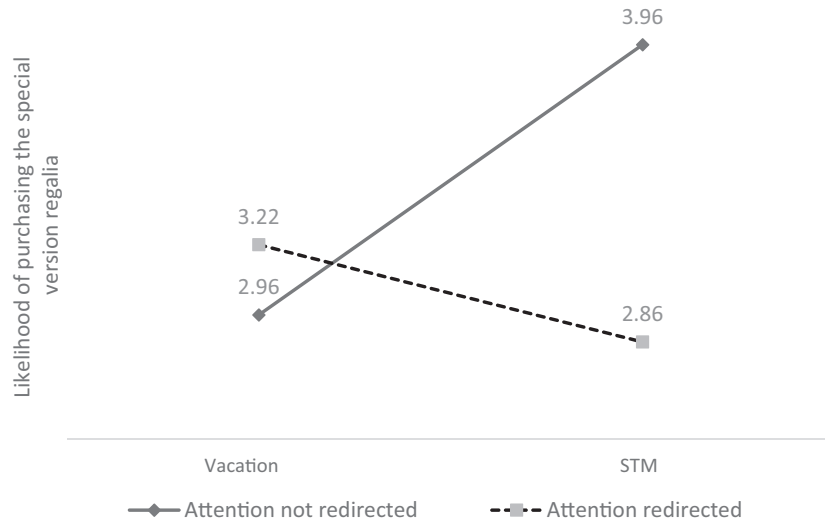


Figure 4. Likelihood to purchase the special version of regalia as a function of STM and attention redirection

rather than the intrinsic utility of the product. Therefore, it is possible that the same product would reap benefits from STM-related marketing differently depending on whether the presentation method highlights the nondefault nature of the purchase. The next experiment tests this possibility.

Experiment 4

In experiment 4, we further tested the potential substantive implication of our findings by more realistic consumption scenarios. Applying our findings so far, we propose that, for the activation of STM to be effective in influencing consumer behavior, the marketer must establish a default, or benchmark option, against which the consumer can take action. That is frequently the situation that consumers face when a marketer attempts to upsell a standard offering. Specifically, consumers primed with STM may be more willing to buy premium versions of products when add-on items (e.g., a drink and fries added to an order of a hamburger) and premium features (e.g., heated leather seats and a premium sound system on a car) are construed as proactive upgrades, in comparison to the traditional direct comparison tactic in which the baseline version and the premium version are presented side by side. This is expected because such upgrade opportunities resemble nonconforming actions that differ from the baseline product offerings. Premium products and product bundles are often presented along with baseline product offerings in the hope that a contrasting effect would

accentuate the appeal of the additional features/products. Research has shown that the direct comparison, in which a premium product/product bundle and the baseline product are presented simultaneously, may not be the most effective selling tactic due to the activation of conflicting processing goal when one makes a choice (Cunha & Shulman, 2011). However, when a consumer is primed with STM, he or she may become more susceptible to upselling, a tactic in which the baseline product is presented first and the premium/bundle offering is provided as an upgrade option later. The early entry of the baseline product is often established as the default representation in consumers' memory and judgment (Carpenter & Nakamoto, 1989; Kardes, Kalyanaram, Chandrashekar, & Dornoff, 1993; Robinson & Fornell, 1985), whereas the upgrade option represents an action that deviates from the default. According to the theory we put forward, consumers with an active STM should be more inclined to purchase the offering of add-on products as upgrades than they would in a direct-comparison situation. We tested this hypothesis in experiment 4.

Pretest

To support our assumption that the upselling scenario (US), relative to the direct comparison (DC) scenario, is more likely to capture a situation in which the baseline offering represents a default from which the upgrade opportunity would deviate, we recruited 134 participants with the demographic composition being similar to that of

previous experiments (54 females, 18–35 years old) for a pretest.

Participants were randomly assigned to either the US or DC condition in a car-purchase scenario. A listing for the standard trim package of a car offering indicated that it included Standard Comfort Drive Features, along with basic information such as engine specifications and fuel efficiency. In the DC condition, the premium luxury package was presented next to the standard model on the same screen with the same basic information, but in addition to standard comfort drive features, it also included premium features of keyless entry/start, backup camera, premium sound system, and leather interior and seating. In the US condition, the premium package was presented on a separate screen following the one with the standard package and listed only with the exclusive premium features. After reading the information regarding the different trims of cars, participants in both the DC and US conditions were presented the same information regarding two potential customers: Pat, who decided to purchase the baseline package, and Chris, who chose to purchase the premium package. Participants indicated how much they agreed with the following statement on a 7-point Likert scale: "In comparison to Chris, Pat is more likely to be the kind of person who accepts things in life the way they are." A one-way ANOVA revealed that the participants in the US condition were indeed more likely to agree that Pat, the person who chose the baseline version, would accept aspects of life as they are, compared to those in the DC condition ($M_{US} = 5.44$, $M_{DC} = 4.89$; $F(1, 132) = 5.54$, $p < .05$). Thus, we confirm that participants indeed perceived a default vs. nondefault contrast in the US condition, but not in the DC condition.

Participants, Design, and Procedure

For the main task, we recruited 265 participants aged 35 or younger through Amazon Mechanical Turk using the same screening process in experiment 1 (129 females). The experiment was a 2 (mind-set: control vs. STM) $\times$ 2 (selling tactic: DC vs. US) factorial design. The mind-set factor was manipulated between subjects using the same procedure used in experiment 1.

Selling Product Upgrades

Similar to the pretest, participants were randomly assigned to either the DC condition or the US condition. The hypothetical-purchase scenarios

consisted of both a choice between a standard trim package and a premium trim package of a full-size sedan, as in the pretest, and a choice between a two-course meal and a three-course meal, a replicate used to test whether the effect can also be observed for purchases that imply lower financial risk relative to the car-purchase scenario.

In the car-purchase scenario, information regarding different versions of car trims was identical to that of the pretest. The only change was that, rather than reading about the decisions of hypothetical customers Pat and Chris, participants were asked to imagine themselves shopping for a car. In the DC condition, participants were asked, "Considering that both packages are reasonably priced, which package would you be more inclined to purchase?" In the US condition, participants were asked, "Considering both packages are reasonably priced, would you be inclined to upgrade from the standard package to the premium package?" In sum, the choice between the baseline or premium package served as the dependent variable in both conditions, but the questions were phrased differently across conditions, since the key contribution of this experiment is to illustrate the importance of framing in the effectiveness of STM on consumer preferences.

In the dinner scenario, participants in the DC condition were given a hypothetical restaurant menu listed with options for entrée, side, and dessert. Participants were given two combo options: "Dinner Combo for \$12, including one entrée and one side dish of your choice" and "Dinner Combo with Dessert for \$16, including one entrée, one side dish, and one dessert item of your choice." Participants first chose their desired combo option, and then selected the desired menu items for each course of the meal; for example, a cheeseburger for the entrée, and fries for the side dish. In the US condition, participants were first presented with a menu with only items for the entrée and side dish and identified the desired items for this "Dinner Combo for \$12 with one entrée and side dish." On the next screen, participants were presented with a separate dessert menu and were asked if they would like to upgrade the dinner combo to include a dessert item for an addition \$4. Under both conditions, whether the participant ordered dessert served as the dependent variable.

Results and Discussion

Given that the dependent variables in experiment 4 consisted of repeated binary choices, we analyzed the data using a Generalized Estimating

Equation model with a binomial logistic link. This analysis treated the within-subject repeated choices as cross-sectional panel data and allowed for more efficient and unbiased estimation of coefficients while accounting for the effect of the prior choice (i.e., carry-over effects) via an autoregressive working correlation matrix (Ballinger, 2004; Ge, Häubl, & Elrod, 2012; Liang & Zeger, 1986). The analysis revealed an interaction effect between participants' mind-set and the selling tactics on product choices (Wald $\chi^2(1) = 8.17, p < .01$, see Figure 5). In the DC condition, no significant difference in terms of choice proportions was observed across participants primed with STM and their counterparts with a neutral mind-set ($M_{STM} = 0.46, M_{control} = 0.53$; Wald $\chi^2(1) = 1.18, n.s.$). In the US condition, however, participants primed with STM were more likely to choose product upgrades compared to their counterparts in the control condition ($M_{STM} = 0.61, M_{control} = 0.42$; Wald $\chi^2(1) = 8.92, p < .01$). The same pattern of interaction was also observed for each of the consumption scenarios (car: Wald $\chi^2(1) = 4.51, p < .05$; dinner combos: Wald $\chi^2(1) = 5.28, p < .05$).

Overall, the results in experiment 4 showed that activating STM did not necessarily make product bundles that included premium features or add-on items more attractive to potential buyers when the option did not include an action element, as was the case for direct comparison. However, presenting the added premium features and products as upgrade options, as in the upselling case, made it a viable tactic because it took advantage of participants' inclination to take action under STM.

Experiment 5

Ostensibly, the upselling technique might highlight the superfluous nature of the premium product option, and therefore, the observed effects could be argued as being a form of "peacocking" motivation rather than the action-taking behavior as we propose. To parse out this potential confound, in experiment 5, we replicated the findings from experiment 4 with a set of unattractive options by using the "added cost" framing. Also, rather than an imagined shopping scenario as seen in experiment 4, the choice set used as the dependent variable in experiment 5 bore implications for one's own utility regarding how the remainder of the survey would be carried out.

Participants, Design, and Procedure

We recruited 336 participants aged 35 or younger through the online survey participation panel Prodege MR on Demand (<https://www.prodegemr.com/>), using the same screening process in experiment 1 (211 females). The experiment was a 2 (mind-set: control vs. STM) $\times$ 2 (choice framing: direct comparison vs. opt-in) factorial design. The mind-set factor was manipulated between subjects using the same procedure used in experiment 1.

Choice Framing

After completing the mating mind-set-priming section as in the previous experiments, all participants were informed that they had two options for

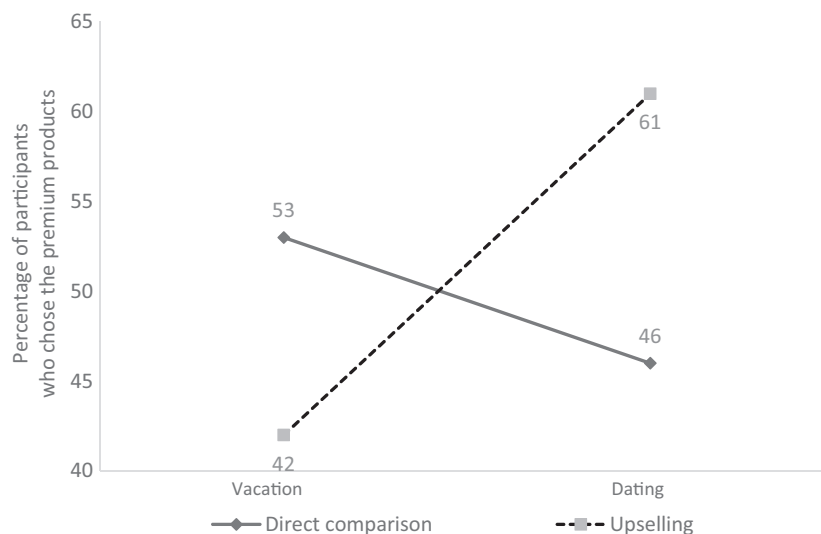


Figure 5. Percentage of participants who chose the premium products as a function of mind-set manipulation and selling tactics

the second part of the survey: (a) a developmental skills questionnaire, which was a fairly standard questionnaire regarding one's mental development skills, or (b) a mindfulness questionnaire that was more complex and challenging regarding one's mindfulness and that required some careful contemplation and attentive focus from the participant. All participants were explicitly notified that both questionnaires would take about the same amount of time to complete, but past results from the mindfulness questionnaire had been sporadic, because some participants had complained that they felt mentally fatigued after the questionnaire. We expressed our gratitude in advance to any participant who would choose to take the mindfulness questionnaire, the more difficult option, to make up for the insufficient sample from the past.

Thus, since the completion of either option would qualify the participant for the same compensation, the mindfulness questionnaire option was effectively more costly to the participant due to the taxing process and risk of mental fatigue.

In the direct comparison (DC) condition, analogous to the DC condition in experiment 4, both questionnaire options were presented side by side. Participants indicated their choice of questionnaire using a conventional multiple-choice radio button format. In the opt-in condition, the developmental skills questionnaire was presented as the standard option, whereas the mindfulness questionnaire, the more costly option, was presented as the alternative. A single checkbox was presented for participants to indicate their choice of questionnaires. If a participant checked the box that indicated "I would like to take the alternative questionnaire," he or she would expect to be redirected to the more difficult questionnaire; otherwise, each participant would proceed to the standard questionnaire.

Regardless of the choice of questionnaires, on the subsequent page, all participants were informed that there was a malfunction in our URL redirection server and the survey would terminate. All participants were then thanked, dismissed, and compensated with the full amount promised at sign-up.

Manipulation Check

We recruited 74 participants from Prodege MR, the same population of the main study, to test the manipulation of the perceived effort/cost associated with each type of questionnaire. Participants were either told they were about to take a developmental skills questionnaire or a mindfulness questionnaire (between-subject), the descriptions of which are

identical to those for the main experiment. Participants were asked about the extent to which they agreed with the following three statements: (a) "It sounds like this survey will require more effort than the surveys I usually participate in," (b) "Based on the description, I anticipate that a participant who finishes this survey attentively may feel more mentally tired than they usually do," and (c) "If offered as an alternative, I would rather take a standard word association test of similar length instead of the survey described above." These three questions yielded satisfactory internal reliability (Cronbach's Alpha = 0.84). A *t*-test on the composite score consisting of these three measures showed that the mindfulness questionnaire was, in fact, perceived as more costly than the developmental questionnaire ($M_{\text{mindfulness}} = 4.92$, $M_{\text{developmental}} = 3.62$; $t(1, 72) = -4.12$, $p < .01$).

Results and Discussion

Whether or not the participants chose to complete the mindfulness questionnaire, the more costly option, was used as the dependent variable. A binary logistic regression revealed that there was an interaction between mind-set conditions and the framing of choices (Wald $\chi^2(1) = 5.15$, $p < .05$, see Figure 6). We did not observe any isolated effect on participants' choice of questionnaires from the mind-set manipulation or choice framing (respectively, Wald $\chi^2(1) = 1.95$, *n.s.*; Wald $\chi^2(1) = 1.10$, *n.s.*). Specifically, participants primed with STM were more likely to choose the effortful and fatiguing mindfulness questionnaire when it was presented as an opt-in choice than when the two survey options were given side by side ($M_{\text{opt-in}} = 0.58$, $M_{\text{DC}} = 0.41$; Wald $\chi^2(1) = 4.75$, $p < .05$). This difference was not observed for the participants in the control mind-set condition ($M_{\text{opt-in}} = 0.43$, $M_{\text{DC}} = 0.51$; Wald $\chi^2(1) = 1.11$, *n.s.*). When the two choices were presented simultaneously in the DC condition, the mind-set manipulation did not lead to a change in preference for the more costly option ($M_{\text{STM}} = 0.41$, $M_{\text{control}} = 0.51$; Wald $\chi^2(1) = 1.97$, *n.s.*). However, when the developmental skills questionnaire was framed as the standard task and the mindfulness questionnaire was framed as the alternative which participants had to opt-in to take, it demonstrated an effect that approached significance indicating that participants primed with STM were more likely to choose the alternative questionnaire despite the knowledge that it could be more costly regarding their effort ($M_{\text{STM}} = 0.58$, $M_{\text{control}} = 0.43$; Wald $\chi^2(1) = 3.36$,



Figure 6. Percentage of participants who chose the costly questionnaire as a function of mind-set manipulation and framing

$p = .06$ -two-tailed; $p = .03$, given the directional nature of our prediction).

Therefore, experiment 5 replicates the general findings from experiment 4 and extends the generalizability of our theory in that the effect of STM on one's tendency to take action against status quo is not limited to the scenarios in which an individual faces a set of attractive options, but is also applicable when the "action" activity may prove to be more costly to the individual. Meanwhile, one may be tempted to argue that participants opted to take the more costly mindfulness questionnaire due to altruism and to "help out the researchers," which would have been consistent with the "benevolent lover" behavior previously documented (Griskevicius et al., 2007). However, if this benevolence effect had indeed taken place, it would have affected all participants primed with the STM regardless of the presentation method factor. Thus, only a fixed effect (i.e., change in intercept) should be expected from this interference of benevolence effect but not the interaction.

Combined, experiments 4 and 5 provide evidence that the effectiveness of STM at swaying consumer choices is dependent on the perception of the product or task being framed as default-defying rather than being dependent on the intrinsic utility of the product or task.

General Conclusion and Discussion

In the current research, we propose and demonstrate that STM leads individuals to act against the

default state of affairs, a phenomenon that violates the well-documented status quo bias (Ritov & Baron, 1992; Spranca et al., 1991). As evidenced in previous research, the preservation of the status quo is associated with a prevention focus, whereas the action against the status quo is associated with a promotion focus (Roese et al., 1999). We provide evidence that STM enhances one's promotion focus, which leads to the mitigation or even reversal of the status quo bias. As a result, the findings from our research contribute to the extant literature regarding the impact of the mating mind-set on consumer behavior in multiple ways.

First, our research expands our knowledge about the mechanisms through which the mating mind-set influences individuals' decision making. To date, a considerable portion of research on the topic of mating mind-set has revolved around individuals' impression management tactics, either for the purpose of attracting potential partners (Griskevicius et al., 2006; Sundie et al., 2011) or deterring potential poachers (Wang & Griskevicius, 2014). In comparison, our research posits that STM alters behavior by influencing one's regulatory focus, a mechanism that has not been previously documented in the extant literature. To illustrate, in experiment 2, we observed that an active STM influenced the preference between stocks and fixed-income bonds, depending on the specification of default conditions; in experiment 3, participants with an active STM were more likely to select the special version of the academic regalia, even though it was deemed as less attractive than the standard version. None of the products used for dependent

measures in experiments 1 through 3 had obvious implications for mating advantage. However, our evidence consistently pointed to the conclusion that the change in participants' decisions was related to the heightened promotion focus when the STM was activated. Furthermore, whereas research in this area of consumer psychology has extensively addressed consumers' shopping behavior regarding particular types of products, namely those that are risk-laden or subject to speculation of losses (Durante et al., 2011; Li et al., 2012; Shanks et al., 2015), our research shows that the action-against-default effect is domain independent and may be applicable to a wider array of real-life scenarios. As seen in experiments 1 and 2, the intrinsic qualities of the options available, specifically the risk factor, did not affect STM participants' decision making. Interestingly, by merely framing the options as defaults or nondefaults, we were able to toggle STM participants' preferences.

Our research also contributes to the literature on the status quo bias in important ways. Previous research on this bias has mainly focused on post-decision evaluation, such as the finding that, under the circumstances in which action, instead of status quo, seems justifiable, consumers experience less post hoc regret over their actions (Abendroth & Diehl, 2006; Inman & Zeelenberg, 2002). Building upon this foundation, we have unveiled a boundary condition for the widely documented status quo bias. In contrast to the studies related to post hoc evaluations, we show that STM is linked to actual dispositional behavior tendencies that are contrary to the status quo bias, and the results are consistent across scenarios of card games, financial decision making, and purchase decisions. We demonstrated that individuals primed with an STM state make choices against the status quo and that this behavior is orthogonal to the risk factors associated with possible payoffs underlying each potential course of action.

We believe the insights from this research may have direct implications for marketing practice. Even before the increased criticism of gender-stereotyping, the effectiveness of advertisements that actively encourage STM mind-sets was questioned by the industry. The lack of success of such tactics is often attributed to the mismatch between the perceived STM-enhancing utility and the target demographic (Lindstrom, 2011). However, as seen in the current research, the degree of impact of STM mind-set may rely on consumers perceiving the consumption decision as a nondefault option, rather than them merely appreciating the intrinsic utility

of the product. As seen in the findings in experiment 4, in order to take the full advantage of a consumer's heightened STM mind-set, restaurants and car dealerships can use upselling techniques, which establish baselines (i.e., the default) using the basic versions of offering and highlight the premium versions of the offering as upgrades (i.e., nondefault). In contrast, in the absence of a baseline behavior (i.e., the default), it may be difficult to cast the advertised product as the nondefault, which is a plausible cause as to why many advertisements are often met with weak response despite the heavy use of elements intended to enhance the STM mind-set.

In the process of making these contributions, we also provide a basis for both marketers and policy makers to understand the conditions under which consumers may be diverted from the status quo bias. For instance, marketers can attempt to break habitual buying by framing offers as "take action" offerings. Similarly, policy makers can attempt to promote healthier eating and better financial decision making by leading consumers to move away from default options that do not have the consumer's best interest in mind.

Limitations and Future Research

A primary goal of the current research is to provide an explanation that accounts for the different levels of effectiveness of STM beyond the traditional understanding associated with risk-taking behavior. To this end, we uncovered a specific type of behavioral change, namely action against default. Interestingly, we also demonstrated that this effect takes place because STM inflates one's promotion focus, which leads to the heightened likelihood of action taking. Whereas we believe that this mechanism is adequate to account for our primary research focus, future research could further explore the full extent to which the change in regulatory focus affects one's preference between action and inaction. Specifically, although prior speculation and circumstantial evidence have indicated an association between prevention focus and the status quo bias (e.g., Gilovich & Medvec, 1995; Roese et al., 1999), to the best of our knowledge, we are the first to empirically test the link between one's regulatory focus and actual behavioral outcomes beyond counterfactual thinking. At the same time, we are intrigued about the extent of the generalizability of this effect. In other words, does regulatory focus affect one's preference between action and inaction only when compounded with the priming

of STM? Future researchers could use other manipulations in addition to STM priming to elicit a change in regulatory focus and examine whether the same effect holds. This question is particularly relevant in today's marketing practice, considering that overly sexualized marketing materials draw controversy in historical scales: if marketers can alter consumer preference between action and status quo by inflating promotion focus independent of the activation of STM, they can phase out the use of STM-suggestive materials, a tactic laden with high social risk, and yet maintain similar marketing outcomes.

The current research also does not account for potential differences between men and women in terms of their responses to STM. A number of existing studies document the trait differences between men's and women's mating strategies (Meyers-Levy & Loken, 2015). Although trait differences such as the fact that men's and women's STM are activated via different means may present some procedural challenges in the experimental setting (Festjens, Bruyneel, & Dewitte, 2014), we were glad to observe that our studies were not influenced by these gender-specific differences. From a theoretical standpoint, there are reasons to believe that the propensity to be primed STM and the likelihood of behavioral change once STM is primed are two orthogonal factors. In other words, whereas we recognize the differences between men and women in their propensity of adopting STM and their specific courtship behaviors, we expect that both men and women share a general similarity in that if, and when, the STM mind-set is activated, they tend to become promotion focused. Empirically, as seen in experiment 1, including or excluding gender as a factor in the analysis did not change our results. The other experiments, all using samples inclusive of both genders, consistently produced results in line with our hypotheses. Hence, we contend that the action effect under STM is a robust effect that applies to both genders in a similar fashion. However, we should not rule out the possibility that, within the general direction outlined in our current research, there may exist domain-specific boundary conditions in which men and women react differently under STM. Again, as reviewed earlier, although men and women are likely to adopt a reward-driven perspective when under STM, the specific reasons differ between genders. Men with active STM states are originally motivated to maximize the number of potential mates they can attract, whereas women are driven by the prospect of immediate resource extraction from their short-

term partners (Buss, 1994; Haselton & Buss, 2000; Sundie et al., 2011). Thus, uncovering the different tactics used by men and women under the general approach motivation spawned by STM could prove to be a fruitful source of future research topics.

A similar issue is that we could not test for participants' sexual orientations. Although we realize the LGBT individuals account for over 4.5% of the U.S. population (Newport, 2018), we also felt it would be invasive to inquire regarding one's sexual orientation or use it as a basis for participant qualification. However, despite the assumption that non-heterosexual participants in the STM conditions would not have been successfully primed, thus introducing statistical noise in the analysis, all experiments reported here with inclusive samples showed statistically significant effects.

Considering the discussion above, coupled with the fact that we achieved our experimental results with imagination procedures in the STM conditions without any sexually explicit material, we are confident that STM-related marketing would remain a viable part of the modern diversity-conscious consumer life. To this end, we reiterate that the key to successfully reap the full benefit of enhanced STM mind-set is to establish a default course of action in order for the marketer-intended behavior to be perceived as the nondefault action and favored by the consumer as a result of heightened promotion focus. Thus, we invite future researchers to further explore the boundary conditions of this general finding based on the diverse nature of genders and sexual orientations.

REFERENCES

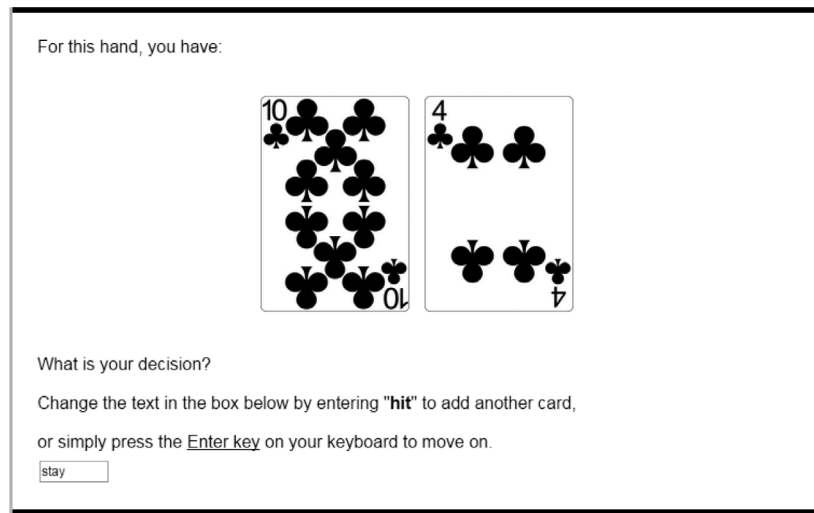
- Abendroth, L. J., & Diehl, K. (2006). Now or never: Effects of limited purchase opportunities on patterns of regret over time. *Journal of Consumer Research*, 33, 342–351. <https://doi.org/10.1086/508438>
- Anderson, C. J. (2003). The psychology of doing nothing: Forms of decision avoidance result from reason and emotion. *Psychological Bulletin*, 129, 139–167. <https://doi.org/10.1037/0033-2909.129.1.139>
- Baker, M. D., & Maner, J. K. (2008). Risk-taking as a situationally sensitive male mating strategy. *Evolution and Human Behavior*, 29, 391–395. <https://doi.org/10.1016/j.evolhumbehav.2008.06.001>
- Ballinger, G. A. (2004). Using generalized estimating equations for longitudinal data analysis. *Organizational Research Methods*, 7, 127–150. <https://doi.org/10.1177/1094428104263672>
- Baron, J., & Ritov, I. (2004). Omission bias, individual differences, and normality. *Organizational Behavior and*

- Human Decision Processes*, 94, 74–85. <https://doi.org/10.1016/j.obhdp.2004.03.003>
- Buss, D. M. (1994). Evolution of desire: Strategies of human mating. *American Scientist*, 82, 238–249.
- Buss, D. M., & Schmitt, D. P. (1993). Sexual strategies theory: An evolutionary perspective on human mating. *Psychological Review*, 100, 204–232. <https://doi.org/10.1037/0033-295X.100.2.204>
- Carpenter, G. S., & Nakamoto, K. (1989). Consumer preference formation and pioneering advantage. *Journal of Marketing Research*, 26, 285–298. <https://doi.org/10.2307/3172901>
- Chen, R., Zheng, Y., & Zhang, Y. (2016). Fickle men, faithful women: Effects of mating cues on men's and women's variety-seeking behavior in consumption. *Journal of Consumer Psychology*, 26, 275–282. <https://doi.org/10.1016/j.jcps.2015.07.002>
- Chernev, A. (2004). Goal orientation and consumer preference for the status quo. *Journal of Consumer Research*, 31, 557–565. <https://doi.org/10.1086/425090>
- Cunha, M., & Shulman, J. D. (2011). Assimilation and contrast in price evaluations. *Journal of Consumer Research*, 37, 822–835. <https://doi.org/10.1086/656060>
- Durante, K. M., & Arsenau, A. R. (2015). Playing the field: The effect of fertility on women's desire for variety. *Journal of Consumer Research*, 41, 1372–1391. <https://doi.org/10.1086/679652>
- Durante, K. M., Griskevicius, V., Hill, S. E., Perilloux, C., & Li, N. P. (2011). Ovulation, female competition, and product choice: Hormonal influences on consumer behavior. *Journal of Consumer Research*, 37, 921–934. <https://doi.org/10.1086/656575>
- Festjens, A., Bruyneel, S., & Dewitte, S. (2014). What a feeling! Touching sexually laden stimuli makes women seek rewards. *Journal of Consumer Psychology*, 24, 387–393. <https://doi.org/10.1016/j.jcps.2013.10.001>
- Förster, J., Higgins, E. T., & Idson, L. C. (1998). Approach and avoidance strength during goal attainment: Regulatory focus and the “goal looms larger” effect. *Journal of Personality and Social Psychology*, 75, 1115–1131. <https://doi.org/10.1037/0022-3514.75.5.1115>
- Galinsky, A. D., Gruenfeld, D. H., & Magee, J. C. (2003). From power to action. *Journal of Personality and Social Psychology*, 85, 453–466. <https://doi.org/10.1037/0022-3514.85.3.453>
- Ge, X., Häubl, G., & Elrod, T. (2012). What to say when: Influencing consumer choice by delaying the presentation of favorable information. *Journal of Consumer Research*, 38, 1004–1021. <https://doi.org/10.1086/661937>
- Gilovich, T., & Medvec, V. H. (1995). The experience of regret: What, when, and why. *Psychological Review*, 102, 379–395.
- Griskevicius, V., Goldstein, N. J., Mortensen, C. R., Cialdini, R. B., & Kenrick, D. T. (2006). Going along versus going alone: When fundamental motives facilitate strategic (non)conformity. *Journal of Personality and Social Psychology*, 91, 281–294. <https://doi.org/10.1037/0022-3514.91.2.281>
- Griskevicius, V., Tybur, J. M., Gangestad, S. W., Perea, E. F., Shapiro, J. R., & Kenrick, D. T. (2009). Aggress to impress: Hostility as an evolved context-dependent strategy. *Journal of Personality and Social Psychology*, 96, 980–994. <https://doi.org/10.1037/a0013907>
- Griskevicius, V., Tybur, J. M., Sundie, J. M., Cialdini, R. B., Miller, G. F., & Kenrick, D. T. (2007). Blatant benevolence and conspicuous consumption: When romantic motives elicit strategic costly signals. *Journal of Personality and Social Psychology*, 93, 85–102. <https://doi.org/10.1037/0022-3514.93.1.85>
- Haselton, M. G., & Buss, D. M. (2000). Error management theory: A new perspective on biases in cross-sex mind reading. *Journal of Personality and Social Psychology*, 78, 81–91. <https://doi.org/10.1037/0022-3514.78.1.81>
- Higgins, E. T., Friedman, R. S., Harlow, R. E., Idson, L. C., Ayduk, O. N., & Taylor, A. (2001). Achievement orientations from subjective histories of success: Promotion pride versus prevention pride. *European Journal of Social Psychology*, 31, 3–23. <https://doi.org/10.1002/ejsp.27>
- Inman, J. J., & Zeelenberg, M. (2002). Regret in repeat purchase versus switching decisions: The attenuating role of decision justifiability. *Journal of Consumer Research*, 29, 116–128. <https://doi.org/10.1086/339925>
- Jonason, P. K., Garcia, J. R., Webster, G. D., Li, N. P., & Fisher, H. E. (2015). Relationship dealbreakers: Traits people avoid in potential mates. *Personality and Social Psychology Bulletin*, 41, 1697–1711. <https://doi.org/10.1177/0146167215609064>
- Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica*, 47, 263–292. <https://doi.org/10.2307/1914185>
- Kardes, F. R., Kalyanaram, G., Chandrashekar, M., & Dornoff, R. J. (1993). Brand retrieval, consideration set composition, consumer choice, and the pioneering advantage. *Journal of Consumer Research*, 20, 62. <https://doi.org/10.1086/209333>
- Li, Y. J., Kenrick, D. T., Griskevicius, V., & Neuberg, S. L. (2012). Economic decision biases and fundamental motivations: How mating and self-protection alter loss aversion. *Journal of Personality and Social Psychology*, 102, 550–561. <https://doi.org/10.1037/a0025844>
- Liang, K.-Y., & Zeger, S. L. (1986). Longitudinal data analysis using generalized linear models. *Biometrika*, 73, 13–22. <https://doi.org/10.1093/biomet/73.1.13>
- Liberman, N., Idson, L. C., Camacho, C. J., & Higgins, E. T. (1999). Promotion and prevention choices between stability and change. *Journal of Personality and Social Psychology*, 77, 1135–1145. <https://doi.org/10.1037/0022-3514.77.6.1135>
- Lindstrom, M. (2011). Can a commercial be too sexy for its own good? Ask axe. *The Atlantic*. Retrieved August 13, 2019, from source <https://www.theatlantic.com/>

- business/archive/2011/10/can-a-commercial-be-too-sexy-for-its-own-good-ask-axe/246863/
- Meyers-Levy, J., & Loken, B. (2015). Revisiting gender differences: What we know and what lies ahead. *Journal of Consumer Psychology*, 25, 129–149. <https://doi.org/10.1016/j.jcps.2014.06.003>
- Newport, F. (2018). In U.S., Estimate of LGBT Population Rises to 4.5%. Retrieved August 13, 2019, from source <https://news.gallup.com/poll/234863/estimate-lgbt-population-rises.aspx>
- Pham, M. T., & Chang, H. H. (2010). Regulatory focus, regulatory fit, and the search and consideration of choice alternatives. *Journal of Consumer Research*, 37, 626–640. <https://doi.org/10.1086/655668>
- Pham, M. T., & Higgins, E. T. (2005). Promotion and prevention in consumer decision making: The state of the art and theoretical propositions. In S. Ratneshwar, & D. G. Mick (Eds.), *Inside consumption: Consumer motives, goals, and desires*. New York, NY: Routledge.
- Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments, & Computers: A Journal of the Psychonomic Society Inc*, 36, 717–731. <https://doi.org/10.3758/BF03206553>
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, 40, 879–891. <https://doi.org/10.3758/BRM.40.3.879>
- Ritov, I., & Baron, J. (1992). Status-quo and omission biases. *Journal of Risk and Uncertainty*, 5, 49–61. <https://doi.org/10.1007/BF00208786>
- Ritov, I., & Baron, J. (1995). Outcome knowledge, regret, and omission bias. *Organizational Behavior and Human Decision Processes*, 64, 119–127. <https://doi.org/10.1006/obhd.1995.1094>
- Robinson, W. T., & Fornell, C. (1985). Sources of market pioneer advantages in consumer goods industries. *Journal of Marketing Research*, 22, 305–317. <https://doi.org/10.2307/3151427>
- Roose, N. J., Hur, T., & Pennington, G. L. (1999). Counterfactual thinking and regulatory focus: Implications for action versus inaction and sufficiency versus necessity. *Journal of Personality and Social Psychology*, 77, 1109–1120. <https://doi.org/10.1037/0022-3514.77.6.1109>
- Samuelson, W., & Zeckhauser, R. (1988). Status quo bias in decision making. *Journal of Risk and Uncertainty*, 1, 7–59. <https://doi.org/10.1007/BF00055564>
- Schmitt, D. P., Shackelford, T. K., & Buss, D. M. (2001). Are men really more “oriented” toward short-term mating than women? A critical review of theory and research. *Psychology, Evolution & Gender*, 3, 211–239. <https://doi.org/10.1080/14616660110119331>
- Shanks, D. R., Vadillo, M. A., Riedel, B., Clymo, A., Govind, S., Hickin, N., . . . Puhlmann, L. M. C. (2015). Romance, risk, and replication: Can consumer choices and risk-taking be primed by mating motives? *Journal of Experimental Psychology: General*, 144, e142.
- Spranca, M., Minsk, E., & Baron, J. (1991). Omission and commission in judgment and choice. *Journal of Experimental Social Psychology*, 27, 76–105. [https://doi.org/10.1016/0022-1031\(91\)90011-T](https://doi.org/10.1016/0022-1031(91)90011-T)
- Sundie, J. M., Kenrick, D. T., Griskevicius, V., Tybur, J. M., Vohs, K. D., & Beal, D. J. (2011). Peacocks, Porsches, and Thorstein Veblen: Conspicuous consumption as a sexual signaling system. *Journal of Personality and Social Psychology*, 100, 664–680. <https://doi.org/10.1037/a0021669>
- Wang, Y., & Griskevicius, V. (2014). Conspicuous consumption, relationships, and rivals: Women’s luxury products as signals to other women. *Journal of Consumer Research*, 40, 834–854. <https://doi.org/10.1086/673256>
- Zeelenberg, M. (1999). Anticipated regret, expected feedback and behavioral decision making. *Journal of Behavioral Decision Making*, 12, 93–106. [https://doi.org/10.1002/\(SICI\)1099-0771\(199906\)12:2<93::AID-BDM311>3.0.CO;2-S](https://doi.org/10.1002/(SICI)1099-0771(199906)12:2<93::AID-BDM311>3.0.CO;2-S)
- Zeelenberg, M., & Pieters, R. (2007). A theory of regret regulation 1.0. *Journal of Consumer Psychology*, 17, 29–35. https://doi.org/10.1207/s15327663jcp1701_6
- Zeelenberg, M., van de Bos, K., van Dijk, E., & Pieters, R. (2002). The inaction effect in the psychology of regret. *Journal of Personality and Social Psychology*, 82, 314–327. <https://doi.org/10.1037/0022-3514.82.3.314>
- Zhang, Y., & Fishbach, A. (2005). The role of anticipated emotions in the endowment effect. *Journal of Consumer Psychology*, 15, 316–324. https://doi.org/10.1207/s15327663jcp1504_6
- Zhao, X., Lynch, J. J. G., & Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and truths about mediation analysis. *Journal of Consumer Research*, 37, 197–206. <https://doi.org/10.1086/651257>
- Zhou, R., & Pham, M. T. (2004). Promotion and prevention across mental accounts: When financial products dictate consumers & investment goals. *Journal of Consumer Research*, 31, 125–135. <https://doi.org/10.1086/383429>

Appendix A

Sample Screenshot from Experiment 1



Appendix B

Standard Vs. Special Version Regalia Design from Experiment 3



Supporting Information

Additional supporting information may be found in the online version of this article at the publisher's website:

Appendix S1. Methodological Details