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July 2010
Forthcoming in the *Journal of Marketing Research*

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Self-Regulatory Strength and Consumers’ Relinquishment of Decision Control: When Less Effortful Decisions are More Resource Depleting

Abstract

Based on the self-regulatory strength model and prior research on self-esteem threats, we predict and show that delegating decisions to surrogates – such as financial advisors or physicians – depletes consumers’ limited self-regulatory resources more than making the same decisions independently, thus impairing their subsequent ability to exercise self-control. This is the case even though decision delegation actually requires less decision making effort than independent decision making (Study 1). However, the resource depleting effect of decision delegation vanishes when consumers have an opportunity to affirm their belief in free will (Study 2). Moreover, remembering a past decision that one delegated impairs self-control more than remembering a decision that one made independently (Studies 3 and 4). The theoretical and practical implications of these findings are discussed.

Keywords: Consumer Decision Making, Decision Assistance, Surrogates, Self-Regulation, Relinquishment of Control, Self-Esteem, Ego Threat, Self-Affirmation, Free Will
Consumers may obtain assistance from surrogates (e.g., physicians, financial advisors) in connection with a variety of decisions. In some cases, a surrogate assumes complete control over the decision, which is typically referred to as “decision delegation” (see Hollander and Rassuli 1999). Consumers’ inclination to relinquish control to surrogates is correlated with various demographic and psychographic factors (Forsythe, Butler, and Schaefer 1990; Solomon 1987). Although it has been suggested that the psychological processes driving consumers’ willingness to relinquish decision control to surrogates should be better understood (see, e.g., Solomon 1986), research on this topic has been limited.

Work on selection of information sources has focused on how consumers evaluate and select agents that provide recommendations (Gershoff, Broniarczyk, and West 2001; Gershoff, Mukherjee, and Mukhopadhyay 2003; 2007), but it has not investigated the delegation of decisions to such agents. Research on consumer response to the forced relinquishment of decision control suggests that, when choosing among desirable alternatives, consumers are less satisfied with their decisions when their freedom to choose has been removed than when they are allowed to choose freely (Botti and Iyengar 2004), and that this effect is moderated by the differentiability of the alternatives (Botti and McGill 2006).

Based on the self-regulatory strength model (Baumeister and Heatherton 1996; Baumeister et al. 1998) and prior work on threats to self-esteem (e.g., Steele 1988; Steele and Liu 1983), we propose that delegating a decision to a surrogate poses a self-esteem threat, and that coping with this threat depletes consumers’ limited self-regulatory resources (i.e., impairs their ability to exercise self-control) more than making the same decision independently. The findings of four studies provide clear support for these hypotheses – delegating a decision to a surrogate leads to lower performance on a subsequent task that requires self-control than making
the same decision independently (Study 1), affirmation of individuals’ beliefs in free will eliminates the resource depletion caused by decision delegation (Study 2), providing a reminder of a decision that was delegated to someone else in the past depletes more resources than remembering a decision that was made independently (Studies 3 and 4).

The present research contributes to the literature on surrogate usage by examining the psychological processes underlying consumers’ decisions to relinquish control to surrogates. In addition, it advances the literature on freedom of choice by showing that an important reason why consumers desire to have freedom of choice – and thus might be reluctant to delegate their decisions to surrogates – is that relinquishing this freedom depletes their self-regulatory resources and impairs their ability to exert self-control. Finally, the present research also contributes to the psychology literature on the relinquishment of control (e.g., Strube and Werner 1985) in that it is the first to investigate this phenomenon using the self-regulatory strength model as a theoretical framework.

**THEORETICAL FRAMEWORK**

Previous research suggests that consumers place a high value on their freedom to choose. They typically prefer making their own choices over having “choices” externally imposed on them (Botti and Iyengar 2004; Botti and McGill 2006) and this preference for choosing is robust to variations in choice context (Botti and McGill 2006). Consumers tend to switch stores when their freedom to choose is threatened by the stockout of an attractive product (Fitzsimons 2000). Unsolicited product recommendations cause consumers to assert their freedom of choice by going against these recommendations (Fitzsimons and Lehmann 2004). Consumers avoid choosing rewards that cause them to feel less autonomous in their decision making (Kivetz 2005). Having to choose from an externally determined set of alternatives causes greater conflict
and discomfort than being free to delay choice and look for other alternatives (Dhar and Simonson 2003).

Why do consumers place such a high value on freedom of choice? Feeling capable of free choice is an integral component of people’s self-concept (Steele 1988). Individuals possess a strong belief in free will, which allows them to maintain the perception that they are able to exercise free choice (Baumeister et al. 2008). Therefore, when approaching a decision, people typically presume that they have the freedom to make this decision as they wish (Clee and Wicklund 1980). Moreover, autonomy – i.e., the desire to see oneself as the source of one’s actions – is a basic psychological need that humans are inherently motivated to satisfy (Deci and Ryan 1991). In sum, the prior literature suggests that individuals have a strong inclination to see themselves as agents who are capable of free choice and seek opportunities to maintain this self-image.

The present research investigates the effects of a self-esteem threat posed by an action (i.e., decision delegation) that violates this self-image. While some have argued that self-esteem serves to assuage the anxiety that results from humans’ awareness of their inevitable death (Pyszczynski et al. 2004), others have suggested that self-esteem serves as a monitor of the extent to which humans are viewed as valuable and important by social groups (Leary and Baumeister 2000). Although a strong motivation to maintain and defend high self-esteem prevails among humans (e.g., Tesser 1988), it has been shown that various factors such as social rejection (e.g., Leary et al. 1995) and negative social identities (e.g., Ethier and Deaux 1994) tend to reduce self-esteem.

Delegation of consumer decisions – e.g., to surrogates who make decisions on behalf of their clients – violates consumers’ belief in themselves as free agents. The inconsistency between
one’s self-concept and a behavior that violates this self-concept causes psychological discomfort which motivates one either to change one’s personal attitudes or to distort one’s interpretation of the situation (Aronson 1992). Such internal inconsistencies also threaten one’s self-esteem by making one feel inadequate according to essential components of one’s self-concept (Steele 1988; Steele and Liu 1983). For instance, consumers who relinquish their freedom to choose experience an internal inconsistency between their view of themselves as free decision makers and their behavior of relinquishing decision control. This inconsistency poses a strong threat to their self-esteem by making them feel inadequate according to their personal expectations from themselves to act as free agents.

In the present research, we investigate an important consequence of experiencing such a threat to self-esteem. It has been suggested that defense mechanisms activated by self-esteem threats use resources of the self that could otherwise be employed to achieve other, unrelated tasks (Vohs and Baumeister 2004; Schmeichel and Vohs 2009). In support of this, a threat to self-esteem has been shown to impair recall by creating interference (Holmes and Schallow 1969) and to cause dieters’ failure to inhibit their intake of high-calorie food (Heatherton, Herman, and Polivy 1991). Thinking about their inevitable death (i.e., a form of self-esteem threat; Pyszczynski et al. 2004) decreased participants’ performance in the Stroop color-word interference task (Gailliot, Schmeichel, and Baumeister 2006). Building on these previous findings and on the self-regulatory strength model (Baumeister et al. 1998), we propose that the self-esteem threat caused by decision delegation depletes consumers’ self-regulatory resources.

According to the self-regulatory strength model (Baumeister and Heatherton 1996; Baumeister et al. 1998), individuals have limited self-regulatory resources that are subject to depletion by effortful self-regulation. In turn, the depletion of these resources impairs
performance in a subsequent task that requires self-control. For instance, in a study by Muraven, Tice, and Baumeister (1998), participants who were instructed to regulate their emotional responses while watching a movie found it more effortful to watch the movie than did those who received no such instructions. In a subsequent task (squeezing a handgrip), individuals who had been asked to regulate their emotions were less able to exercise self-control than those who had not. In another study, Vohs, Baumeister, and Ciarocco (2005) found that effortful self-presentation (presenting oneself boastfully to a friend) depleted self-regulatory resources more than did less effortful self-presentation (presenting oneself modestly to a friend). In the present research, we identify a class of behaviors for which this relationship between effort and resource depletion is reversed. In particular, we show that, even though delegating a decision to a competent surrogate requires less decision making effort than making the decision independently, it actually results in greater depletion of self-regulatory resources.

Making choices between available alternatives is an effortful activity that depletes self-regulatory resources (Baumeister et al. 1998; Vohs et al. 2008). While such resource depletion impairs performance in higher-order cognitive tasks that require effort, it tends not to influence performance in lower-order cognitive tasks that are automatic (Schmeichel, Vohs, and Baumeister 2003). In a similar vein, resource depletion influences consumer decisions through reduced engagement in effortful cognitive processes and increased reliance on intuition (Pocheptsova et al. 2009). Moreover, it has been shown that making a series of decisions tends to deplete self-regulatory resources more than does performing a neutral task that does not involve making decisions (Vohs et al. 2008). Finally, Moller et al. (2006) found that participants who were urged to choose a particular alternative showed less persistence on subsequent tasks that required self-regulatory resources than those who were instructed to choose any alternative they
wished. Although the latter study suggests that decision makers may experience less resource depletion from making decisions when they feel more autonomous, the psychological process underlying this effect has not been examined to date.

We propose that the resource depletion caused by decreased feelings of decision autonomy is due to the use of self-regulatory resources to cope with the self-esteem threat posed by the absence of decision control. We compare the self-regulatory resource depletion resulting from delegating a decision (i.e., lack of autonomy) to that caused by making the decision independently. People are motivated to perceive themselves as “capable of free choice” (Steele 1988, p. 262). Violation of this perception imposes a threat to one’s self-esteem by making one feel inadequate and/or lacking integrity (Steele 1988). Such threats activate an intense cognitive activity composed of explanations and rationalizations aimed at ameliorating the negative implications to self (Steele 1988). Developing such explanations and/or rationalizations may require the suppression of undesirable thoughts and the development of counter arguments both of which tap into the limited resources for self-regulation (Muraven et al. 1998; Burkley 2008). For example, being targeted by a stereotype threat depletes self-regulatory resources through increasing efforts to control undesirable thoughts and emotions aroused by this threat (Johns, Inzlicht, and Schmader 2008). Although making a decision independently requires cognitive/emotional effort which also uses one’s self-regulatory resources (Baumeister et al. 1998, Vohs et al. 2008), we propose that the amount of self-regulatory resources required by the cognitive coping mechanisms activated by delegating a decision surpasses the amount of self-regulatory resources required by making the same decision independently.

**H1:** Delegating a decision to a surrogate depletes more self-regulatory resources than making the decision independently.
Prior research has shown that affirming a valued aspect of the self reduces defensive coping with threats to self-esteem (McQueen and Klein 2006; Steele 1988). For instance, value affirmation weakens the effect of control deprivation on people’s tendency to make extreme attributions aimed at increasing their perceived control over the environment (Liu and Steele 1986). Also, affirming an important personal value increases the acceptance of self-threatening information by increasing warm feelings toward others (Crocker, Niiya, and Mischkowski 2008) and eliminates the tendency to defend one’s worldview following a reminder of one’s mortality by reducing the accessibility of death-related thoughts (Schmeichel and Martens 2005). Moreover, Schmeichel and Vohs (2009) have shown that self-affirmation enhances self-control when self-regulatory resources are depleted. Using a similar logic, if resource depletion resulting from decision delegation is caused by a threat to consumers’ self-image as free agents, affirming their belief in themselves as free agents should facilitate their coping with the threat posed by decision delegation. Consequently, it should be possible to diminish the extent of resource depletion resulting from decision delegation through an intervention that leads individuals to affirm their belief in themselves as free agents.

**H2:** Affirming one’s belief in oneself as a free agent dampens the resource depleting impact of delegating a decision (vs. making the decision independently).

Reminding individuals of actions they undertook in the past can create psychological responses similar to those experienced at the time. For instance, it has been shown that cognitive dissonance effects can be reinstated in this manner (Steele and Liu 1983; Higgins, Rhodewalt, and Zanna 1979). Remembering a decision that was delegated in the past should increase the accessibility of cognitions associated with one’s inability to act independently. The fact that these cognitions are inconsistent with one’s self-view as a free agent should cause a threat to
self-esteem. By contrast, remembering a past decision that was made independently should not activate cognitions inconsistent with one’s self-view as a free agent and should, therefore, not pose a self-esteem threat. Thus, based on prior work suggesting that coping with self-esteem threats depletes self-regulatory resources (e.g., Schmeichel and Martens 2005), we predict that the resource depleting effect of decision delegation (relative to independent decision making) can be recreated by simply reminding consumers of a decision that they delegated in the past.

**H3:** Remembering a decision that one delegated in the past depletes self-regulatory resources more than remembering an independently made decision.

Testing hypotheses H1 to H2 entails the random assignment of participants to either a delegated decision condition or an independent decision condition. In order to prevent a selection bias, it is critical that all participants who are randomly assigned to the delegated decision condition are required to in fact delegate their decisions (to a surrogate) – and that is done in the first two studies. This restriction is an obstacle to testing whether voluntary delegation also depletes self-regulatory resources. Therefore, this restriction is relaxed in Studies 3 and 4, where participants are asked to contemplate past decisions that they either delegated or made independently (to test H3). We propose that both forced and voluntary delegation pose a threat to self-esteem as both behaviors activate cognitions that are inconsistent with consumers’ self-image as free agents. Therefore, we expect that both remembering a forcibly delegated decision and remembering one that was delegated voluntarily depletes more self-regulatory resources than remembering a decision that was made independently. We test this prediction by manipulating whether participants are asked to remember decisions that they were required to delegate or decisions that they chose to delegate.
STUDY 1

The objective of this study is to test the hypothesis that, all else being equal, delegating a decision to a surrogate depletes more self-regulatory resources than making the same decision independently (H1).

Method

Participants and Design. Fifty-three undergraduate students (35 males and 18 females) participated in the study for course credit. They were randomly assigned to one of two decision mode conditions for selecting a hotel for a vacation – choosing one of the available hotels on their own (“independent decision”) or having a competent surrogate select one on their behalf (“delegation”).

Procedure. Participants completed the study on computers in a research lab. To measure the availability of self-regulatory resources, participants were instructed to press the down-arrow key on a computer keyboard with their right index finger, to keep their finger on that key for as long as they could (see Appendix W1). This is similar to the handgrip measure used in prior research on self-regulatory resources (e.g., Vohs et al. 2005) in that it requires mental and physical self-control. Participants performed the key pressing task twice, once before and once after the decision task. The decrease in key pressing time between trials is a measure of the amount of resource depletion caused by the decision.

Upon completion of the “before” trial of the key pressing task, participants were directed to the decision task. Participants were asked to imagine that they were choosing a hotel for a one-week vacation in the Bahamas. They then read the descriptions of two available hotels (see Appendix W2). The information was ambiguous in that each hotel had an equal number of
advantages and disadvantages relative to the other. Once participants had examined the
descriptions of both hotels, the experimental manipulation was implemented.

Participants in the independent decision condition chose whichever hotel they preferred.
By contrast, those in the delegation condition were told that they would be provided with
assistance from an experienced travel agent who would select a hotel on their behalf. More
specifically, participants in the delegation condition learned that the travel agent had actually
compared the two hotels in a recent review article published in a travel magazine, and reached
the conclusion that one of them was clearly better than the other. They were then informed which
of the two hotels the agent chose on their behalf. (In fact, one of the hotels was selected at
random for each participant in this condition.)

In both conditions, participants were then presented with what was described as traveler
ratings of the two hotels, reflecting the overall satisfaction of a large number of previous guests
(on a scale from 1 = “not at all satisfied” to 5 = “very satisfied”). All participants were told that
the average satisfaction rating of the hotel that they would be staying at was 4.5, whereas that of
the other hotel was 4.2. This was done to ensure that participants in both conditions experienced
the same decision outcome. After that, affect was measured using the PANAS scale (Watson,
Clark, and Tellegen 1988).

Participants then performed the “after” trial of the key pressing task. Following that, they
responded to a questionnaire that included a measure of their satisfaction with the hotel decision
(“How satisfied are you with your hotel decision?”; 0 = “not at all satisfied” to 10 = “very
satisfied”), measures that assessed involvement of self in the decision (“To what extent were you
actively involved in making the hotel decision?”; 0 = “not at all actively involved” to 10 = “very
actively involved”) and decision effort (“How much effort did you spend in order to make the hotel decision?”; 0 = “no effort” to 10 = “a lot of effort”), as well as demographics questions.

Results

Preliminary Analyses. As expected, involvement of self in the decision was greater in the independent decision condition \((M = 7.24, SD = 3.79)\) than in the delegation condition \((M = 1.75, SD = 3.29; t(51) = 7.64, p < .0001)\), and participants in the independent decision condition also reported having spent more effort to make the decision \((M = 5.86, SD = 2.61)\) than those in the delegation condition \((M = 3.17, SD = 2.87; t(51) = 3.57, p < .0001)\). Neither positive affect \((p > .9)\) nor negative affect \((p > .9)\), measured immediately after the decision, varied by condition, ruling out the possibility that any resource-depleting effect of decision mode might have been driven by differential affective responses. The choice shares of the two hotels were evenly split both in the independent decision condition (38% Island Breeze, 62% Ocean Dream, \(\chi^2(1,29) = 1.69, p > .19\)) and in the delegation condition (42% Island Breeze, 58% Ocean Dream, \(\chi^2(1,24) = 0.67, p > .41\)). Moreover, the distribution of hotel choices did not differ significantly between conditions \(\chi^2(1,53) = 0.08, p > .78\). Therefore, participants on average experienced the same choices across conditions.

Depletion of Self-Regulatory Resources. The time participants spent pressing the key was analyzed using a mixed ANOVA with decision mode as a between-subjects variable and trial (before vs. after the decision task) as a within-subject variable. Although we used the log-transformed durations in our analyses, we present non-transformed means for ease of interpretation. Overall, the key pressing time was shorter after the decision task than prior to it \((M_{T1} = 135.66s, M_{T2} = 112.68s; F(1,51) = 6.66, p < .02)\). A confounding check was negative in that it revealed that there was no difference in key pressing time on the first trial between the two
decision mode conditions ($p > .6$). Our hypothesis was that the amount of resource depletion – measured as the decrease in key pressing time between the two trials – would be greater in the delegation condition than in the independent decision condition (H1). The critical test of this hypothesis is the interaction effect between trial and decision mode, which turned out to be significant ($F(1,51) = 4.03, p < .05$). As predicted, decision delegation led to a substantial decrease in key pressing time ($M_{T1-T2} = 52.34s; t(23) = 2.74, p < .02$), whereas making the decision independently had no effect on this measure ($p > .6$).

*Satisfaction with the Decision. A possible alternative account of this result might be that having to delegate their decision (e.g., not being able to choose the option that participants would choose if they made the decision independently) decreased participants’ satisfaction with the decision and that this dissatisfaction led to less persistence on the key pressing task. We re-ran our analysis, this time controlling for participants’ satisfaction with their decision. First, in line with the findings of prior research (e.g., Botti and Iyengar 2004), participants who had to delegate their decision ($M = 6.96, SD = 2.74$) were less satisfied with it than those who made it independently ($M = 8.48, SD = 1.38; t(51) = 2.62, p < .02$). Moreover, when controlling for satisfaction with the decision in the mixed ANOVA, the interaction between trial and decision mode was still significant ($F(1,50) = 4.56, p < .04$), whereas the interaction between trial and satisfaction was not ($p > .4$). Therefore, this alternative account is not supported.

Discussion

Although participants in the delegation condition spent less effort on the decision than those who made the decision on their own, resource depletion was greater in the delegation condition than in the independent decision condition. The results of Study 1 thus provide clear support for our hypothesis that, relative to making a decision independently (i.e., without
assistance), relinquishing the control over that decision to a surrogate depletes consumers’ limited self-regulatory resources and impairs their subsequent ability to exercise self-control.

STUDY 2

The primary objective of Study 2 is to test the hypothesis that affirming the belief in oneself as a free agent reduces the resource depletion caused by decision delegation (H2). An additional objective of this study is to rule out an alternative explanation based on reactance theory (Brehm 1966). Consumers whose freedom to choose has been removed may experience psychological reactance that leads them to regain their sense of freedom by refusing to submit to restrictive requirements of self-control (e.g., refusing to withhold from eating a dessert that is bad for their health). Affirming a belief in free will should increase the propensity to experience psychological reactance through increasing the perceived importance of the freedom to choose. If the lack of self-control after decision delegation were driven by psychological reactance, self-control in the delegation condition should be weaker among participants who affirmed their belief in free will than that among those who did not.

Method

Participants and Design. Ninety-eight residents of four English speaking countries (Canada, the UK, Australia, and New Zealand) were recruited using a university-run online participant panel (58 females, 40 males, median age = 38.5). They received a payment of $4 (US). Participants were randomly assigned to the cells of a 2 decision mode (independent vs. delegation) x 2 affirmation of self as a free agent (yes vs. no) between-subjects design.

Procedure. Participants completed the study via the internet using their personal computers. They were informed that they would participate in three unrelated studies. The first part manipulated affirmation of self as a free agent. Participants read and reflected on the
meaning of 15 sentences. Next, they were asked what the overarching theme of the sentences was, and they typed their answers to this question in a text box. Participants in the affirmation condition read statements that affirm the belief in free will (e.g., “I demonstrate my free will every day when I make decisions.”) whereas participants in the no affirmation condition read neutral statements (e.g., “Many of the mountain peaks in the Rockies are over 14,000 feet high.”). The sentences were identical to those used by Vohs and Schooler (2008).

The second part manipulated decision mode. Participants were asked to imagine that they had a wrist injury and that they visited a physician who was a specialist on joint injuries. Participants were asked to imagine that the physician told them that a cyst had formed on their wrist, and that this could be treated either by taking a drug or through surgery. The risks and benefits of each treatment option were described to participants on separate screens. The order of presentation was counterbalanced. After that, a table summarizing the information about both options was presented (see Appendix W3). The display position (left vs. right) of the treatment options in the table was counterbalanced. Participants in the independent condition chose which treatment they would receive, whereas those in the delegation condition were asked to imagine that they decided to let the physician choose one of the treatment options on their behalf (see Appendix W4). The physician’s treatment choice in the delegation condition was determined using a yoking design. Whenever possible (i.e., when the number of participants in the independent decision condition who had completed their treatment decision exceeded the number of participants in the delegation condition whose choices had already been yoked), the physician’s choice for a given participant in the delegation condition was yoked to the treatment choice of the participant in the independent condition next in line for yoking. Otherwise, the physician’s treatment choice for the participant in the delegation condition was determined at
random. Using this method, 96% of the physician’s treatment choices were determined by yoking. After being provided with a table that summarizes the information about the treatment that they would receive (Appendices W5 and W6), participants completed the PANAS scale (Watson et al. 1988).

The third part measured resource depletion. Participants were told that this part of the study was about how people made food decisions. They were presented with pictures of two desserts and asked to indicate which one they would eat if they had the two desserts in front of them right then (see Appendix W7). The two desserts were a fruit salad and a chocolate cake (Shiv and Fedorikhin 1999). The depletion of self-regulatory resources increases the likelihood of choosing the chocolate cake over the fruit salad (Bruyneel et al. 2006) as the chocolate cake is an affect-driven impulsive alternative (Shiv and Fedorikhin 1999). Finally, they completed a questionnaire that included measures of effort and involvement adapted from Study 1.

Results

Preliminary Analyses. Positive affect, negative affect, effort spent to make the treatment decision, and involvement with the treatment decision were subjected to separate 2 (decision mode) x 2 (self affirmation) ANOVAs. Neither negative affect (all \( p \) values > .49) nor positive affect (all \( p \) values > .13) significantly varied between the cells of the design. As expected, participants in the independent condition (\( M = 6.54, SD = 2.43 \)) reported greater decision making effort than those in the delegation condition (\( M = 3.13, SD = 3.07, F(1,94) = 36.34, p < .0001 \)). No other effects were significant in the model with effort as the dependent measure.

The ANOVA with involvement as the dependent measure revealed significant main effects of decision mode (\( F(1,94) = 137.30, p < .0001 \)) and self affirmation (\( F(1,94) = 9.21, p < .004 \)). Involvement with the delegated decision (\( M = 2.94, SD = 3.56 \)) was less than that with
the independent decision ($M = 8.84$, $SD = 1.34$). Participants who had affirmed their belief in free will ($M = 6.52$, $SD = 3.85$) reported greater involvement than those who had not done so ($M = 5.35$, $SD = 4.08$). The interaction between decision mode and affirmation was also significant ($F(1,94) = 3.87$, $p = .05$). The analyses of simple effects revealed that involvement with the independent decision in the affirmation condition ($M = 9.13$, $SD = 1.11$) did not significantly differ from that in the no affirmation condition ($M = 8.58$, $SD = 1.50$, $p > .44$). However, perceived involvement with the delegated decision in the affirmation condition ($M = 4.11$, $SD = 3.92$) was significantly greater than that in the no affirmation condition ($M = 1.55$, $SD = 2.54$, $F(1,94) = 12.23$, $p < .0008$). Therefore, affirming their belief in free will increased participants’ perceived involvement with their delegated decisions.

The choice shares of the two treatment options were evenly split both in the independent decision condition (50% drug, 50% surgical, $\chi^2(1,50) = 0$, $p = 1.00$) and in the delegation condition (54% drug, 46% surgical, $\chi^2(1,48) = 0.33$, $p > .56$). Treatment choice was also analyzed using a logistic regression model with decision mode, affirmation, and their interaction as independent variables. This analysis revealed no significant effects (all $p$ values > .66). Therefore, participants on average experienced the same choices across conditions.

*Depletion of Self-Regulatory Resources.* The dessert choice was analyzed using a logistic regression model with decision mode, affirmation, and their interaction as independent variables. No main effects emerged (both $p$ values > .19), but the interaction between decision mode and affirmation was significant ($\chi^2(1,98) = 4.08$, $p < .05$). This interaction (see Figure 1) was further investigated by testing simple effects. In the no affirmation condition, participants who had delegated their decisions were more likely to choose the chocolate cake than those who had made their decisions independently ($\chi^2(1,48) = 5.37$, $p < .03$). In the delegation condition, those
who had affirmed their belief in free will were less likely to choose the cake than those who had not affirmed their belief in free will ($\chi^2(1,48) = 4.22, p < .04$). No other simple effects were significant (both $p$ values $> .41$).

**Discussion**

If decision delegation is perceived as a threat to consumers’ self-esteem and coping with this threat depletes their limited self-regulatory resources, weakening the strength of this threat by affirming their ability to exercise free choice should also weaken the resource depletion caused by it. The results of Study 2 provide strong support for this hypothesis (H2), whereas they contradict the predictions implied by an alternative account based on reactance theory.

**STUDY 3**

Study 3 examines the hypothesis that merely reminding consumers of a decision that they delegated in the past reduces their self-control relative to reminding them of a past decision that they made independently (H3).

**Method**

*Participants and Design.* Thirty-six residents of Canada (21 females, 15 males, median age = 40.5) were recruited through a university-run online participant panel. They received a payment of $3. Participants were randomly assigned to one of two experimental conditions – they were either reminded of a past decision that they delegated or of one that they made independently.

*Procedure.* Participants completed the study via the Internet using their personal computers. They first learned that they would participate in two unrelated studies. The first part included the reminder manipulation. To conceal its true purpose, this was presented to participants as “Study 1 - Personality Assessment”. Participants first responded to the self-
monitoring scale (Snyder 1974). Next, they were asked to respond to two open-ended questions. The cover story for these two questions was the same as that used in prior research that also asked open-ended questions to induce a threat to self-esteem (e.g., Greenberg et al. 1990). Specifically, participants were told that the questions represented recently developed personality measures, and that their responses would be analyzed to assess various dimensions of their personality. The first question was “Briefly describe a decision that you made yourself in the past” in the independent decision condition and “Briefly describe a decision that someone else made on your behalf in the past” in the delegated decision condition. To ensure that decisions recalled in both conditions were equally important, all participants were also informed that this should be a decision that had important consequences for them. The second question, which was the same in both conditions, was designed to get participants to elaborate: “Describe, as specifically as you can, all the thoughts and feelings that experiencing this decision caused you to have.” After that, participants completed the PANAS scale (Watson et al. 1988). (A sample of the decisions reported by participants is provided in Appendix W8.)

The second part was designed to measure self-regulatory resource depletion. Participants were asked to choose between a chocolate cake and a fruit salad following the same procedure as in Study 2. After making the choice, participants completed a questionnaire that included items about the past decision that they recalled during the first part: (1) ease of recall: “How easy was it for you to recall this decision?” (1 = “not at all easy”, 7 = “very easy”), (2) time of the decision: “How long ago did this decision take place?” (pull-down menus), and (3) consequences of the decision: “Were the consequences of this decision negative or positive for you?” (1 = “negative”, 7 = “positive”).
Results

Preliminary Analyses. Neither positive nor negative affect differed between conditions (both $p$ values > .4), nor did the ease of recalling the decision ($M = 6.17, SD = 1.76$), the time of the decision ($M = 5.22$ years, $SD = 8.82$), and the consequences of the decision ($M = 4.43, SD = 1.94$; all $p$ values > .2).

Depletion of Self-Regulatory Resources. The measure of self-regulatory resource depletion was participants’ choice of dessert. A logistic regression analysis showed that the choice share of the chocolate cake among those who had been instructed to recall a delegated decision (70.6%) was significantly greater than that among participants who had been asked to recall an independent decision (31.6%, $\chi^2(1,36) = 5.46, p < .03$).

Discussion

Remembering a delegated decision weakened self-control more than remembering an independently made decision. These results demonstrate that the resource depleting effect of decision delegation can be revived by providing a reminder of the delegated decision, even when the recalled decision occurred in the distant past.

STUDY 4

The objective of Study 4 is to test the prediction that remembering a decision that was forcibly delegated and remembering a decision that was delegated voluntarily both cause greater self-regulatory resource depletion than remembering a decision that was made independently. We propose that whether voluntary or forced delegation depletes more resources depends on the ease of coping with the self-esteem threat posed by each. Various situational factors influence the difficulty of coping with a given type of decision delegation. For instance, forced delegation of a difficult decision may have more negative implications for the self (e.g., “Did those who
didn’t let me choose believe that I was not capable of making such a difficult decision?”) than voluntary delegation of such a decision (e.g., “I let someone else choose on my behalf because I was too busy with other things.”) and, thus, be harder to cope with. By contrast, voluntary delegation of an easy decision may be harder to cope with than forced delegation of such a decision because of the former’s serious self-threatening implications (e.g., “I cannot even make simple decisions on my own.”). Participants in Study 4 recalled a diverse set of decisions that arose from various situations. Therefore, we did not have an a priori prediction as to whether remembering a voluntarily or forcibly delegated decision would be more depleting than the other. The purpose of this study is merely to test whether H3 holds for both voluntary and forced delegation.

In the interest of generalizability, a different measure of the availability of self-regulatory resources was employed in this study. The depletion of self-regulatory resources weakens consumers’ ability to resist external influence attempts. In particular, it has been shown that resource depletion reduces resistance to persuasion (Burkley 2008) and increases compliance with charitable requests (Fennis, Janssen and Vohs 2008). It should also increase consumers’ likelihood of being influenced by sales promotions. Moreover, buying an item on sale can be an instance of impulse buying, which consumers have been shown to be more susceptible to when resource depleted (Vohs and Faber 2007). Therefore, consumers’ inclination to purchase items that are on sale is used as a measure of the depletion of self-regulatory resources in this study.

Method

Participants and Design. One hundred and seven U.S. residents (77 females, 30 males, median age = 37) were recruited through an online participant panel. They received a payment of $3 (US). Participants were randomly assigned to one of three conditions – reminder of a past
independent decision, reminder of a decision that they were required to delegate in the past (forced delegation), or reminder of a decision that they chose to delegate in the past (voluntary delegation).

Procedure. Participants completed the study via the Internet using their personal computers. They learned that they would participate in two unrelated studies. The first part, which included the reminder manipulation, was presented to participants as “Study 1 – Brand Logo Preference and Personality.” To conceal the true purpose of the study, participants were told that the study was designed to help understand how people’s preference for brand logos is related to their personality. Participants first rated five different images for their suitability as brand logos. After that, the reminder manipulation was implemented through two open-ended questions as in Study 3. The first question was “Briefly describe a decision that you made yourself in the past”, “Briefly describe a decision that you were required to let someone else make on your behalf in the past” and “Briefly describe a decision that you voluntarily let someone else make on your behalf in the past” for the independent decision, forced delegation, and voluntary delegation conditions, respectively. The second question, which was the same in all three conditions, was designed to get participants to elaborate: “Describe, as specifically as you can, all the thoughts and feelings that experiencing this decision caused you to have.” (A sample of the decisions recalled by participants is presented in Appendix W9.)

After completing the PANAS scale (Watson et al. 1988), participants started the second part, which was presented as “Study 2 – Shopping Trip to Buy Milk and Bread”. Participants were asked to imagine that they visited a convenience store to buy milk and bread (see Appendix W10). They were also told “The primary purpose of your shopping trip is to buy milk and bread. However, feel free to add other products that you would buy if you were shopping at a
convenience store right now.” Next, they were presented with a shopping interface that contained the images, brief descriptions, and prices of 28 products that were available in the convenience store, including four milk and four bread items (see Appendix W11). Participants were able to add or drop products to/from their shopping basket until they decided to check out and purchase the items in their basket. Four of the 28 products were marked as being on sale, and these did not include any milk or bread items. The key dependent measure was whether a participant purchased one (or more) of the sale items.

Finally, participants completed a questionnaire that included the same items as the one used in Study 3. A manipulation check that measured participants’ willingness to delegate was also included in the two delegation conditions: “How willing were you to let someone else make this decision on your behalf?” (1 = “not at all willing”, 7 = “very willing”). Finally, participants were asked to indicate, for each of the products they acquired during the shopping trip, whether or not they had planned in advance to purchase it.

Results

Preliminary Analyses. Neither positive nor negative affect were influenced by the reminder manipulation (both $p$ values > .55). The ease of recalling the decision ($M = 5.84, SD = 1.61$), the time of the decision ($M = 1.27$ years, $SD = 3.55$), and the consequences of the decision ($M = 5.55, SD = 1.67$) did not differ between conditions (all $p$ values > .2). Participants in the voluntary delegation condition were significantly more willing to let someone else make the decision on their behalf at the time ($M = 5.73, SD = 1.19$) than those in the forced delegation condition ($M = 4.24, SD = 2.30$, $t(64) = 3.41, p < .002$), indicating that the manipulation of voluntary vs. forced delegation was successful. In the convenience store shopping task, 82% of participants purchased both milk and bread, with 93% buying at least one of these two products.
Participants indicated that 97% of all milk and bread purchases were planned in advance, whereas only 18% of their purchases of items on sale were planned.

**Depletion of Self-Regulatory Resources.** Greater self-regulatory resource depletion should render consumers more likely to be influenced by sales promotions. Thus, the key dependent variable is whether a participant purchased any of the sale items during the convenience store shopping task. This binary outcome variable was subjected to a chi-square test, which was significant ($\chi^2(2,107) = 6.69, p < .04$). In particular, the probability of buying a product on sale was significantly higher in the forced delegation condition (44.8%) than in the independent decision condition (19.5%, $\chi^2(1,70) = 5.18, p < .03$). Similarly, the probability of buying a sale item was also significantly higher in the voluntary delegation condition (43.2%) than in the independent decision condition ($\chi^2(1,78) = 5.14, p < .03$). However, the probability of purchasing a product on sale did not differ between the voluntary and the forced delegation conditions ($p > .89$).

**Discussion**

These findings support the prediction that the resource-depleting effect of remembering a delegated decision is invariant to whether a consumer was required to delegate that decision or did so voluntarily. Therefore, our hypothesis H3 holds for both voluntary and forced delegation.

**GENERAL DISCUSSION**

**Contributions and Theoretical Implications**

An emerging body of research building on the self-regulatory strength model (Baumeister and Heatherton 1996; Baumeister et al. 1998) suggests that the depletion of self-regulatory resources can help explain a variety of behaviors in domains such as information processing, self-presentation, and impulse buying (e.g., Schmeichel et al. 2003; Vohs et al. 2005; Vohs and
The present work contributes to this growing literature in that it is the first to examine the interplay between self-regulatory resource depletion and consumers’ relinquishment of decision control to surrogates.

The present research also makes a novel contribution to the literature on self-regulatory resource depletion caused by decision making. It has been shown that the resource depleting effect of decision making (Baumeister et al. 1998; Vohs et al. 2008) decreases as decisions are experienced more autonomously (Moller et al. 2006). The present research departs from this prior work in important ways. First, while Moller et al. investigated independent decisions that caused decreased feelings of autonomy, we have examined decision delegation, which involves the actual removal of the freedom to choose. Second, we have proposed and tested a psychological mechanism that explains the inverse relationship between decision autonomy and the resource depletion caused by decisions, and we have identified a novel moderator of this effect (self-affirmation) that has not been considered in prior research. Third, in contrast to Moller et al.’s work, our research shows that merely providing a reminder of past decisions that lacked in autonomy also depletes individuals’ limited self-regulatory resources.

Previous research on the psychological processes relevant to consumers’ relinquishment of decision control to surrogates such as financial advisors, healthcare professionals, and other service providers has been limited (Usta and Häubl 2010). Therefore, the findings reported here contribute to the marketing literature by shedding light on how relinquishing the control of their decisions to surrogates influences consumers’ availability of self-regulatory resources, which in turn affects consumption and purchase decisions (Baumeister 2002; Vohs and Faber 2007). Another important contribution of the current research is to the literature on consumers’ desire for freedom of choice (e.g., Botti and McGill 2006; Fitzsimons and Lehmann 2004). Our
findings show that consumers’ ability to persist at tasks that require self-control is significantly impaired when their freedom to choose is removed. This suggests that an important reason why consumers desire freedom of choice might be that relinquishing this freedom depletes their limited self-regulatory resources and reduces their ability to be successful at tasks that require self-control.

The evidence presented in this article provides strong support for our hypothesis that decision delegation poses a threat to self-esteem, and that coping with this threat depletes self-regulatory resources. This is also corroborated by the results of an unpublished study in which we show that the more consumers’ self-esteem is contingent on the specific decision-making domain, the more resource depleted they are upon delegating a decision in that domain. It has been suggested that it is the amount of “psychological work” involved in making a decision that determines the extent of resource depletion caused by the decision (see Baumeister et al. 2008). We propose that the psychological work involved in delegating a decision includes the effort required to cope with the self-esteem threat caused by the loss of the freedom to choose. In line with previous work suggesting that the cognitive response to self-esteem threats is very intense (Holmes and Schallow 1969), our results indicate that the psychological work involved in coping with the self-esteem threat posed by delegating a decision is greater than that required for making the decision independently.

**Practical Implications**

It has been suggested that one of the primary reasons why consumers delegate decisions to surrogates is to free up resources such as time and/or cognitive capacity that are required to accomplish other important tasks (Holland and Rassuli 1999). The present research identifies the important role of another type of resource – that required for the self-regulation of behavior –
in consumer decision delegation. However, contrary to the notion that consumers who delegate their decisions to surrogates can conserve resources for other tasks, the findings reported here show that decision delegation actually reduces consumers’ self-regulatory resources and impairs their performance at other tasks that require self-control. Failures of self-control can have profound negative consequences for consumer welfare such as overspending, obesity, and addictions (see, e.g., Baumeister 2002). Therefore, it is important to inform consumers about such welfare implications of relinquishing decision control to surrogates, and about the mental processes that underlie these influences.

Our findings also have important practical implications for marketing communications. As we have shown, the effect of decision delegation on resource depletion can be revived by reminding consumers of a decision that they delegated in the past. Therefore, marketers can induce resource depletion by reminding consumers of previous incidences when they lost the freedom to choose. For example, ads might be designed to link such occasions to a product the purchase of which results from a failure of self-control. Consumers who subsequently see the product in a store and are reminded of the ad might experience resource depletion, which in turn could make them more likely to purchase the product. Moreover, in light of recent work showing that resource depletion facilitates persuasion (Burkley 2008), reminding consumers of instances when they lost the freedom to choose in ads may increase the latter’s persuasiveness.
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Figure 1. Choice Shares of the Chocolate Cake (Study 2)
Web Appendices

Appendix W1

Instructions for the Key Pressing Task (Study 1)

After reading the following instructions, click on the button below to start the task.

1. Press the down arrow key (↓) using your right index finger.
2. Keep your right index finger on the down arrow key as long as you can.
3. Release the key when you feel like you cannot hold it any longer.

It is important that you hold the key as long as you can. Please do not release the key until you feel like you cannot hold your finger on the key any longer.

When you release the key, you will be automatically directed to the following page.

[Click here to start the task]
Appendix W2
Decision Alternatives (Study 1)

HOTEL DECISION

Please examine the information about the two hotels below.

<table>
<thead>
<tr>
<th>Island Breeze Hotel</th>
<th>Ocean Dream Hotel</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Island Breeze Hotel" /></td>
<td><img src="image2.png" alt="Ocean Dream Hotel" /></td>
</tr>
</tbody>
</table>

Three blocks from the beach. Near the shopping/dining area.
Room: 1 king or 2 double beds. No ocean view. Satellite TV.
Free scuba lesson, no fitness center.
Nightly entertainment with live music.
Price: $520/week*

Near the beach. Three blocks from the shopping/dining area.
Room: 1 king or 2 double beds. Ocean view. No satellite TV.
Fitness center, no free scuba lesson.
Nightly entertainment with theme shows.
Price: $540/week*

*Price includes breakfast and lunch.

*Price includes breakfast.
Appendix W3
Decision Alternatives (Study 2)

TREATMENT OPTIONS

The information about each treatment is summarized in the table below.

Please examine this information carefully.

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Surgical Treatment</th>
<th>Drug Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chance of treatment success</td>
<td>Undergo a 1-hour surgery under local anesthesia</td>
<td>Apply a cream twice a day on your wrist</td>
</tr>
<tr>
<td>Time until full recovery if treatment is successful</td>
<td>2 weeks</td>
<td>4 weeks</td>
</tr>
<tr>
<td>Risk of treatment</td>
<td>Permanent nerve damage (probability: 0.1%)</td>
<td>Temporary skin irritation (probability: 10%)</td>
</tr>
</tbody>
</table>
Appendix W4

Task Instructions (Study 2, Delegation Condition)

DELEGATION OF YOUR TREATMENT CHOICE

You decide to delegate your treatment choice to your physician.

Your physician will decide on your behalf which treatment you will receive.

You will not be able to choose how your wrist injury will be treated.
Appendix W5

Chosen Alternative (Study 2, Independent Condition)

FINAL DECISION: YOU WILL RECEIVE THE SURGICAL TREATMENT

You decided that you would receive the surgical treatment.

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Surgical Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chance of treatment success</td>
<td>95%</td>
</tr>
<tr>
<td>Time until full recovery if</td>
<td>2 weeks</td>
</tr>
<tr>
<td>treatment is successful</td>
<td></td>
</tr>
<tr>
<td>Risk of treatment</td>
<td>Permanent nerve damage (probability: 0.1%)</td>
</tr>
</tbody>
</table>
**Appendix W6**

**Chosen Alternative (Study 2, Delegation Condition)**

**FINAL DECISION: YOU WILL RECEIVE THE SURGICAL TREATMENT**

Your physician decided that you would receive the surgical treatment.

<table>
<thead>
<tr>
<th></th>
<th><strong>Surgical Treatment</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Procedure</strong></td>
<td>Undergo a 1-hour surgery under local anesthesia</td>
</tr>
<tr>
<td><strong>Chance of treatment success</strong></td>
<td>95%</td>
</tr>
<tr>
<td><strong>Time until full recovery if treatment is successful</strong></td>
<td>2 weeks</td>
</tr>
<tr>
<td><strong>Risk of treatment</strong></td>
<td>Permanent nerve damage (probability: 0.1%)</td>
</tr>
</tbody>
</table>

Click here to continue
Appendix W7

Dessert Choice Task (Studies 2 & 3)

If you had the following two desserts in front of you now, which one would you eat?

[Images of Fruit Salad and Chocolate Cake]
Appendix W8

Past Decisions Recalled by Participants and Thoughts/Feelings
Caused by Experiencing these Decisions (Study 3)

Independent Decision Condition:

“I decided to go with my friend on his family trip. I felt guilty because they paid for a lot of stuff that made the trip better for me.”

“I decided to stay at a job I didn't really like in order to put my kids through school and to better be able to be home with them when needed. I felt depressed and agitated at the decision to stay at the job rather than to go on and do something that I really wanted to do or to go back to school and try something new. Later on I felt that I had wasted a lot of time and it was very hard for me to go on.”

“I decided to give up a child for adoption. I felt like I was taking the easy way out, abandoning the child while telling myself I was doing what was in child's best interests.”

“I felt that my boss was being unfair in demoting me shortly before my retirement so I chose to retire earlier than I had planned. I felt at the time that I would not miss my job, the social aspect of the workplace and the heavy workload but I was wrong.”

Delegated Decision Condition:

“My fiancée decided on attending a party for his family members. I was upset because I would like to be asked first.”

“My parents separated and my mother decided to take me away from my hometown into a large urban city. This decision made me feel helpless and alone, scared, empty, sad, angry, furious, meek, shy, quiet, unimportant, friendless and unable to trust people or be emotional.”

“I needed my tonsils out at age 13, or at least my doctor thought I did. So he and my parents decided I would have a tonsillectomy. I was scared, mad, felt out of control.”

“It was decided for me that I would be getting married at an earlier age than I had wanted to be married. I was very angry, completely horrified and shocked. I wanted to run away to a different part of the country (another province) for several years until the situation had "cooled down". I had thoughts of hurting, possibly even killing the people that had made the decision for me against my will.”
Appendix W9

Past Decisions Recalled by Participants and Thoughts/Feelings Caused by Experiencing these Decisions (Study 4)

Independent Decision Condition:

“I made a decision regarding shopping and price. I normally use a specific brand of bread, but given the rising prices of everything, decided to go with a less expensive brand that day. The thoughts and feelings that I got were at first disheartened that I had to even consider purchasing another brand and secondly, angry at the increasing prices.”

“I decided to try scuba. I felt excitement, joy and pride that I did it!”

Voluntary Delegation Condition:

“I let an individual make many decisions on the selection of cast and personnel of a play I had written, as well as how the cast and personnel would be treated. I felt insecure, inadequate to the task, disrespected, pushed aside, angry and looked over.”

“I believe the last time I voluntarily let someone else make a decision for me was a DVD purchase. I had several ones I was intending to research more, I sent my oldest daughter to pick one for me. My thoughts after she left to go to Wal-Mart to purchase one, was a little apprehensive as I felt she would pick the one more suited for her entertainment than mine.”

“I let my husband decide what color to paint the outside of the house. I felt secure that my husband would make a good choice. I felt happy that I didn’t have to decide.”

Forced Delegation Condition:

“I was asked to make a recommendation on an equipment purchase at work, but someone else was to decide on the actual purchase, even though I would be the one using the equipment. The decision that person made totally disregarded my recommendation and ended up costing us client satisfaction. It ticked me off. I spent my time trying to find the best product for our needs and someone who had no concern for what we were attempting to accomplish was able to say, no, we don't need it, when in fact we did.”

“My husband picked out flooring for our basement and I was not able to go and help choose so he picked everything. I was very nervous that I would not like what he picked and it would not match the rest of the furnishings. I was anxious to see what he picked and then excited when I saw the final products.”

“When I was pregnant, certain decisions about my health had to be made by the doctor. I felt out of control, I felt annoyed.”
Appendix W10

Task Instructions for Shopping at the Convenience Store (Study 4)

Shopping at the Convenience Store

On the next page you will see a number of products that are available at the convenience store.

- To add a product to your shopping basket, click on its picture.
- In order to buy multiple items of a product, click on the picture of that product multiple times.
- You will also be able to remove a product from your shopping basket by clicking on the "Remove an Item" button.
- To purchase the products in your shopping basket and leave the convenience store, click on the "Checkout" button at the bottom of the screen.

Remember that the primary purpose of your shopping trip is to buy milk and bread.

However, feel free to add other products that you would buy if you were shopping at the convenience store right now.