SELF-REGULATION AND CHOICE:
THE DEPLETING EFFECTS OF CHOOSING FOR SELF VERSUS OTHER

by

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Hon. B.A., University of Waterloo, 2003

A THESIS SUBMITTED IN PARTIAL FULFILMENT OF
THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF ARTS

in

THE FACULTY OF GRADUATE STUDIES
(Psychology)

THE UNIVERSITY OF BRITISH COLUMBIA

August 2005

Abstract

Choosing for the self depletes self-regulatory resources, impairing the ability to exert self-control subsequently (Vohs, Baumeister, Twenge et al., 2005). The current study examined the effect of choosing for others. Because people with interdependent self-construals privilege interpersonal relationships, Asian-Canadians, but not European-Canadians, were expected to experience greater depletion after choosing for others than after choosing for the self, relative to not making choices. Participants made paint color choices from over 200 options while imagining redecorating a room for self or other. Control condition participants simply perused the same options. Persistence on a subsequent math task indexed depletion. As predicted, European-Canadians choosing for self persisted less than those in the other two conditions. Unexpectedly, Asian-Canadians' persistence was unaffected by the manipulation.

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Acknowledgements

I acknowledge my committee members, Drs. Darrin Lehman, Ara Norenzayan, and Kathleen Vohs, for their support and guidance throughout this degree program. My research and critical thinking skills have developed a great deal because of your investment in me.

Thank you Darrin, for accepting me to this program, for your sincere encouragement and for thought-provoking idea sessions. Ara, thank you for including me in your lab meetings, during which I have learned much about the research process generally, as well as the importance of asking the right questions. Thank you, Kathleen; I deeply appreciate the effort you put forth guiding my career thus far. Honest critiques of my writing, time spent developing research with me and your contagious creative energy have immensely improved the quality of my education.

I thank my family, especially my grandmother Irene and my husband Russell, for their support and unwavering belief in my strength and abilities.

Finally, I acknowledge the National Sciences and Engineering Research Council of Canada for the PGS-A award, which funded this degree.

Introduction

Many of the choices we make are primarily for the self; however, choices often implicate others as well. Predicting others' preferences is a critical component of successfully choosing for someone else. How do people make these predictions for others? How does making choices for others affect the self? Despite a long history in the literature of examining the psychology of decision-making, little research has investigated the psychological impact of making choices for others. The current study is one such attempt.

What is known about choosing for the self? Early research on choice demonstrated that giving people choice leads to positive outcomes such as enhanced intrinsic motivation and better performance (e.g., Cordova & Lepper, 1996; Deci & Ryan, 1987). For example, enabling people to choose a task from among a limited set of options (e.g., three tasks), rather than assigning them a specific task, enhances intrinsic motivation and performance on that task (Cordova & Lepper, 1996).

Under some circumstances, however, having control over one's outcomes can be psychologically harmful. Having control can be a negative experience if, for example, the potential for failure outweighs the likelihood of success, if one is excessively concerned about failing in front of others, or if the outcome is unpredictable (Burger, 1989). The act of making choices is an exercise in exerting control over one's outcomes, so it follows that making choices can also result in negative consequences.

Recent research addressing choice behavior has uncovered several negative effects of choice for the self (Botti & Iyengar, 2004; Chernev, 2003; Iyengar & Lepper, 2000; Schwartz, 2000, 2003; Schwartz et al., 2002; Tversky & Shafir, 1992; Vohs, Baumeister, Twenge et al., 2005). For example, the act of choosing from among an

*un*desirable set of options results in less outcome satisfaction than when one is merely assigned a selection from the same set of options (Botti & Iyengar, 2004). When product arrays offer extensive choice, such as 20 or 30 options, people tend to find the choice-making task more frustrating than when there is limited choice, such as six options (Iyengar & Lepper, 2000). Many options also can lead to less satisfaction (Iyengar & Lepper, 2000) and less confidence with the final selection (Chernev, 2003) compared to when relatively few items are available for consideration. This phenomenon has been described as the *tyranny of freedom*: as the number of options increases, so does the difficulty in deciding among them (Schwartz, 2003).

Self-Regulation Resource Depletion and Choice

We conceptualize choice to involve active deliberation among alternatives and commitment to action (Vohs, Baumeister, Twenge et al., 2005). Research suggests that both of these components of choice are psychologically taxing. The formation of judgments is a process that can be viewed as a precursor to choice akin to deliberation. When judgment formation involves relatively slow, controlled processing, research has found it to be effortful and to require mental resources for execution (Kahneman, 2003). Increasing commitment to a course of action also increases effort, suggesting that commitment engages mental resources as well (McCaul, Hinsz, & McCaul, 1987). Furthermore, choice can be viewed as a way of exerting control to achieve or avoid a particular outcome. Because other goal-directed acts of self-regulation tax resources (e.g., Baumeister, Bratslavsky, Muraven & Tice, 1998), it is plausible that choice would similarly produce such an effect.

In a series of studies, Vohs and colleagues investigated whether making a sequence of choices is psychologically taxing (Vohs, Baumeister, Twenge et al., 2005). This research draws from the limited resource model of self-regulation, which states

that acts requiring self-regulation draw from a broad resource that becomes drained with use. Behaviors such as emotion suppression (Vohs & Heatherton, 2000), effortful self-presentation (Vohs, Baumeister, & Ciarocco, 2005), and forcing oneself to eat undesirable foods (Baumeister et al., 1998) render the self less able to self-regulate on a subsequent task (see also Baumeister & Heatherton, 1996; Baumeister, Muraven & Tice, 2000; Muraven & Baumeister, 2000). In five studies, people who made choices were less able to exert self-control on a subsequent task, relative to those who viewed the same or similar stimuli but did not make choices (Vohs, Baumeister, Twenge et al.). A variety of independent and dependent measures were used across the five studies, suggesting that self-regulation resource depletion from choosing for the self is a robust phenomenon.

Choosing for Others: Depleting or Not?

Choosing for others might tax self-regulatory resources in a similar way as choosing for the self does, if the act of choice, not necessarily the target of its consequences, is what is causing self-regulation resource depletion. Deliberation among alternatives and commitment to action are qualities of choice for both self and others, suggesting that the psychology of the two types of choices may be similar.

Supporting the idea of a common underlying process for both decisions, research shows that people are risk-averse when making financial decisions for both the self and for others (Stone, Yates, & Caruthers, 2002). In addition, there is mounting evidence that self-regulatory resources can be depleted by social concerns, such as impression management and effortful self-presentation (Vohs, Baumeister & Ciarocco, 2005), and thinking about rejection from others (Baumeister, DeWall, Ciarocco, & Twenge, 2005; see also Gilbert, Krull, & Pelham, 1988; Rawn & Vohs, in press). However, concerns about others' evaluations of the self are only one aspect of

choosing for someone else. It likely also involves, for example, consideration about the other's preferences and about one's relationship with the other. Moreover, if one is choosing for another person, the choice may be viewed as less important and therefore less taxing of resources than if one is choosing for the self. Nonetheless, the depleting effects of interpersonal processes on self-regulation resources suggests that choosing for others might be as depleting as choosing for the self. Thus, it remains unclear whether attempting to predict others' preferences would also deplete self-regulation resources.

A stronger case can be made in support of the alternative view that making choices for the self depletes self-regulation resources more than does choosing for others. Contrary to findings from Stone et al. (2002), when people make decisions about interpersonal matters for others (e.g., whether the other should telephone a romantic interest despite only having spoken with her once), they tend to be more risk-seeking than when choosing for the self (Beisswanger, Stone, Hupp, & Allgaier, 2003). This finding suggests that people may care less about the potentially negative impact of a choice when someone other than themselves will deal with the consequences. As long as the consequences of the choice are not severe (unlike financial decisions, as in Stone et al.) it seems that the investment in the choice is not as great when choosing for a friend as when choosing for the self.

Although not all preferences reside in the conscious self (Nisbett & Wilson, 1977; Wilson & Dunn, 2004), arguably more knowledge regarding one's preferences is available when making choices for the self than when making choices for others. In addition, one has more experiences with the self than with others, and it is therefore plausible that one has more distinctive information about the self's preferences to be considered when choosing for the self than for others. If people possess a greater store

of information for the self than for others, the search for precise preferences may be more extensive and hence more taxing when choosing for the self than for someone else.

Drawing from both social and developmental literatures, Karniol (2003) argued that knowledge about the self and others is cognitively represented in terms of prototypic categories, to which distinctive information is attached through experience with the target. From the perspective of Karniol's self-as-distinct (SAD) model, people have ideas about others' general preferences in a particular domain (i.e., prototypical information). These general ideas are used to infer others' preferences. However, making preference judgments for the self involves two steps to deduce whether or not one has a distinctive preference in that product category. When deciding for the self, one first considers whether distinct information exists regarding one's own preference in that category. If this information does exist, it is used; if not, prototypical information is used to predict one's own preferences. Based on this theory, making choices for others may be less effortful than making choices for the self because there is an extra cognitive step to take when deciding for the self.

People use the self as a guide for interpreting others' behaviors, suggesting that people may circumvent a potentially effortful process of predicting what others prefer and instead select what they themselves might want. The self's behaviors are used as the norm when interpreting the behaviors of others, resulting in reduced reaction times for interpreting others' behaviors after activation of the self (Dunning & Hayes, 1996). When the outcome will be experienced by someone else, the usual exhaustive search for the best outcome for the self may be curtailed. Consistent with the view that making choices for others is not as involved as making choices for the self, research shows that people do not like to make decisions for other people and avoid it when possible

(Beattie, Baron, Hershey, & Spranca, 1994). Thus, a review of the literature suggests that choosing for others may cause less self-regulation resource depletion than choosing for the self, relative to not making choices.

Self-Regulation Resource Depletion and Other-Orientation

It is possible that individual differences in the emphasis placed on interpersonal concerns will moderate the effects of choosing for others on self-regulation resource depletion. People who are especially focused on others and who draw their identities primarily from relationships may exhibit a reverse pattern, such that more self-regulation resource depletion is caused by choosing for others than by choosing for the self. Placing greater emphasis on the needs of others might result in enhanced encoding of information about the preferences of others, as well as greater perceived importance of making the best decisions for them. Having more information to consider about others and deeming choices for others as highly important could cause depletion of self-regulation resources among highly other-oriented people.

The research and theory discussed earlier demonstrating that knowledge about the self is much more elaborated than knowledge about others was conducting using samples of Americans and others of European descent (Dunning & Hayes, 1996; Karniol, 2003). European-Americans are known for their emphasis on individualism and self-focus, whereas members of other cultures, such as those in East Asia, are recognized as having a self-view that is inextricably connected (i.e., interdependent) with others (e.g., Choi, Nisbett, & Norenzayan, 1999; Heine, Lehman, Markus & Kitayama, 1999; Markus & Kitayama, 1991). There is evidence that Asian-Canadians have stronger elaboration of their collective self than of their personal self in long-term memory (Wagar & Cohen, 2003). Thus, Asian-Canadians may have more knowledge to

consider when choosing for others than when choosing for the self, leading to greater self-regulation resource depletion in the former choice than the latter.

The connection between self-regulation resources and individual differences in other-orientation has been investigated (Seeley & Gardner, 2003). It was predicted that people high in other-orientation are more practiced at self-regulation than those low in other-orientation, because members of the former group often alter their behavior to fit in with others. In this set of studies, thought suppression resulted in self-regulation resource depletion among less other-oriented groups (e.g., European-Americans), consistent with their hypotheses and with past research. However, null effects emerged among those high in other-orientation (e.g., Asian-Americans). It is possible that the thought suppression manipulation did not deplete self-regulatory resources among chronically other-oriented individuals because their other-oriented self was not activated by the task. Tasks that involve others may be more likely to cause self-regulation resource depletion among highly other-oriented people, relative to people low in other-orientation. Because their other-oriented self would be invoked, it is possible that among highly other-oriented people, choosing for someone else will cause self-regulation resource depletion relative to those who choose for the self and to those who do not make choices.

Evidence from cross-cultural investigations of choice suggests that other people, particularly in-group members, are an important part of the choice-making process among members of East Asian cultures. Research investigating cognitive dissonance among the Japanese showed that they did not augment their attitude toward the chosen object unless their interdependent self had been previously activated by social primes (Kitayama, Snibbe, Markus, & Suzuki, 2004). Activating ideas of other people seemed to enhance the importance of the choice among the Japanese, but not among

European-Americans, who were unaffected by the social prime manipulation. In a study of the effects of choice on intrinsic motivation, Iyengar and Lepper (1999) found that European-American and Asian-American children differed in their response to having close others make choices for them. Replicating prior research, providing European-American children with a choice of which task to complete resulted in greater intrinsic motivation to perform well on the task, relative to when they were assigned a task. Asian-American children instead demonstrated greater intrinsic motivation when a trusted authority figure or when peers selected the task for them, relative to when they chose the task for themselves or when it was assigned by an experimenter. The Asian-American children did not seem to effortfully engage in tasks they had chosen for themselves.

These studies demonstrate that others are implicated in choices made by highly other-oriented individuals, but not as much among those low in other-orientation. Making choices for others might similarly be viewed as more important than choosing for the self among other-oriented people, because relationship maintenance is a key goal for them that can be served or hindered by the quality of their choice. The following hypotheses were investigated in the current study:

> It is predicted that people who are low in other-orientation (i.e., European-Canadians) will experience self-regulation resource depletion after choosing for the self but not after choosing for others, relative to not making choices. Those high in other-orientation (i.e., Asian-Canadians), are predicted to experience self-regulation resource depletion after choosing for others to a greater extent than after choosing for the self, relative to not making choices.

To test these predictions, European-Canadians and Asian-Canadians were recruited to participate in a study about consumer decision-making. Participants were directed to an interior decorating website with a multitude of paint-combination options available. Similar to methodology used by Vohs, Baumeister, Twenge, et al. (2005), they either made choices for themselves or for a moderately-close other, or they were instructed to browse the same materials and to follow along with pre-selected options (control condition). Persistence on a subsequent mathematics task was the measure of self-regulation resource depletion.

Method

Participants

One-hundred seventy students at the University of British Columbia participated in this study for course credit. Only European-Canadian (n = 58; 47 women) and Asian-Canadian (n = 76; 67 women) students were included in the data analyses because other cultural groups were not represented in large enough numbers for meaningful comparisons. Asian-Canadian students were of Chinese, Japanese, or Korean ancestry; 33 were born in Canada and 43 were born in East Asia. The latter immigrated to Canada an average of 9.15 years ago (SD = 5.55, *Range* = .33 to 25 years). Mean age of participants was 20.51 years (SD = 3.19), which did not differ between groups, $t(132) = 1.46$, $p = .15$, (European-Canadian M = 20.97, Asian-Canadian M = 20.16).

Materials

A commercial website, www.behr.com, comprised the stimulus materials for this study. This website offers a vast array of options in its *Color Smart Inspiration Library—Interior* (BEHR Process Corporation, 2004), which allows potential customers to peruse seemingly limitless combinations of paint colors. There are 165 different combinations of four colors, from which one combination is chosen. Then consumers are offered the

option to change the darkness, saturation, or hue entirely of any or all of the four colors. One then chooses a picture of a room to virtually paint from an array of 45 kitchens, bedrooms, bathrooms, living rooms, dining rooms, and other types of rooms. Last, there are four locations in each room to paint, including walls, trim, accent, and ceiling, using any of the four selected colors.

This website was chosen for several reasons. It offers a vast array of options and is easy to follow by anyone with experience clicking a computer mouse. It is a website that naturally exists in the field so external validity is good, and the professional design of the website was expected to enhance interest in the study. In addition, interior decorating was assumed to be of some interest to university students, who often move to many different homes throughout their undergraduate years. We used an interior decorating website in the hopes that participants' choices would be somewhat personally meaningful, but not entirely pre-determined by existing preferences.

Design and Procedure

This experiment was a 3 (Choice Task: Self, Other, or No Choice) x 2 (Cultural Background: European-Canadian or Asian-Canadian) between-subjects design. The structure of the experiment followed the self-regulation depletion paradigm, in which participants exert self-control in an initial task, and then self-regulation is measured in a subsequent task (e.g., Vohs, Baumeister, Twenge, et al., 2005; Vohs & Heatherton, 2000). In this paradigm self-regulation resource depletion is operationalized as impaired performance on the second task relative to those in the control condition.

In the current study, participants arrived at the laboratory and provided informed consent. Using the Inclusion of Other in the Self Scale (IOS; Aron, Aron, & Smollan, 1992), all participants identified seven people of varying closeness to the self. The person identified by a moderate degree of closeness, at the midpoint of the scale, was

used as the target of the choices in the Other condition. This was done for two reasons. First, a moderately close other was chosen to add some deliberation to participants' choices, so that they did not know almost everything (as they might with the closest other) or practically nothing (as they might with the least close other) about the other person's preferences. Second, this measure was expected to provide some control to the degree of closeness among the "others" targeted in the Other condition, while ensuring the person was self-relevant for each participant.

Next, participants were randomly assigned to one of the three Choice Tasks, which varied in the instructions provided regarding how to use the paint website. Participants in the Self and Other conditions were instructed to imagine they were about to redecorate a room for either themselves (Self condition) or for the person noted at the midpoint of the IOS (Other condition). Participants in the No Choice condition did not make choices but rather were instructed to think about the website stimuli in order to form an impression of the website. The rest of the instructions were similar across conditions, differing only to identify the appropriate choice target. To help ensure everyone browsed all options, participants were provided with the list of all color options available and were instructed to checkmark beside each one after they viewed it. In total, participants in the Self and Other Choice Task conditions made four choices from among 235-238 possible alternatives, depending on whether or not they chose to alter any of the four colors after their initial selection. In actuality, 81 participants opted to make alterations, which did not differ between the Self and Other Choice Task conditions, $\chi^2(1, N = 81) = 2.49$, $p = .29$, or by cultural background, $\chi^2(1, N = 81) = .38$, $p = .59$, so this variable was not considered in further analyses. All participants were covertly timed by the experimenter during this task in order to assess differences in the length of task completion time across conditions.

Immediately following the choices task, participants completed the Positive Affect – Negative Affect Schedule (Watson, Clark, & Tellegen, 1988). This measure is included in research on self-regulation resource depletion to examine potential differences in mood resulting from the manipulation that could perhaps account for results (e.g., Vohs, Baumeister, & Ciarocco, 2005; Vohs & Heatherton, 2000). Participants' ratings across the 10 items for each subscale were averaged to create two indices of mood. Both subscales achieved adequate inter-item reliability (positive affect: $\alpha = .86$; negative affect: $\alpha = .80$).

After rating mood, participants completed the dependent measure. They were provided with 64 2-digit by 2-digit, 2-digit by 3-digit, and 3-digit by 3-digit multiplication problems, and were instructed to complete as many of the math problems as they could as accurately and quickly as possible. When participants asked if they could stop, research assistants replied that they could finish whenever they wanted. Based on past research (Vohs, Baumeister, Twenge, et al., 2005), the amount of time spent persisting on the questions was used as the main dependent variable assessing self-regulation resource depletion. Accuracy and number of questions attempted were also measured.

Participants then completed Singelis' Self-Construal Scale (Singelis, 1994) to measure independent and interdependent self-construals, as well as a trait self-control scale (Tangney, Baumeister, & Boone, 2004). Finally, all participants provided demographic information, were debriefed, thanked and given their course credit.

Results

Preliminary Analyses

Affect Affect was not expected to differ between Choice Task conditions. Average ratings of the 10 positive and 10 negative items from the PANAS (Watson et al., 1988) formed two indices of post-manipulation affect. Each was examined with a 2 (Cultural

Background) x 3 (Choice Task) univariate Analysis of Variance (ANOVA). Consistent with past studies using a depletion framework, there was no effect of condition, $F(2, 128) < 1$, on negative affect. However, an unexpected main effect of condition emerged for positive affect, $F(1, 128) = 3.15$, $p = .05$, $\omega^2 = -.11$.

Post hoc tests revealed that choosing for others left participants feeling more positively ($M = 2.99$, $SD = .66$) compared to those who chose for themselves ($M = 2.69$, $SD = .68$; $p = .03$) and those who did not make choices ($M = 2.67$, $SD = .67$; $p = .02$), who did not differ from each other ($p = .87$). It is unclear why this result occurred. It is possible that participants enjoyed the process of choosing for others because they did not feel accountable for their decisions as they may have when choosing for the self, but they were still able to choose, as opposed to participants who did not make choices. In order to statistically account for this unexpected effect, positive affect was used as a covariate in the focal analyses.

There were no cultural differences in negative affect, $F(1, 128) = 1.81$, $p = .18$, $d = .23$, or in positive affect, $F(1, 128) = 2.27$, $p = .14$, $d = .26$, nor were there any interactions of choice task by cultural background (all Fs < 1).

Time Spent on Choice Task A 2 (Cultural Background) x 3 (Choice Task) univariate ANOVA revealed a main effect of condition on the amount of time spent on the choice task, $F(2, 128) = 6.89$, $p = .001$, $\omega^2 = -.24$. Post hoc tests revealed that participants in the No Choice condition ($M = 17.23$ minutes, $SD = 7.47$) spent less time on the task than did those in the Self ($M = 23.11$, $SD = 10.25$; $p = .001$) and the Other ($M = 21.72$, $SD = 6.03$; $p = .008$) conditions, which did not differ from each other ($p = .43$). Because time spent on the initial task could influence persistence on the subsequent math task, it was entered as a covariate in the focal analyses.

Accuracy and Number of Questions Attempted To examine the possibility that the European-Canadians and Asian-Canadians differed in mathematics performance, a 2 (Cultural Background) x 3 (Choice Task) univariate ANOVA was conducted on the percentage correct of the number of problems attempted, with positive affect and amount of time spent on Choice Task entered as covariates. Cultural Background predicted how accurately the math problems were completed, $F(1, 126) = 16.25$, $p < .001$, $d = .72$. Asian-Canadians correctly answered an average of 84% of the problems they attempted ($SD = 10.77$); whereas European-Canadians were correct 70% of the time ($SD = 25.80$). No accuracy differences emerged as a function of Choice Task alone or in interaction with Cultural Background (both Fs < 1). To investigate whether the depletion manipulation affected the number of problems attempted, a 2 (Cultural Background) x 3 (Choice Task) ANOVA, with positive affect and time spent on Choice Task entered as covariates, was conducted. No main effects or interactions were found (all ps > .18).

Focal Analyses

Persistence on Math Task Of key interest were the effects of Cultural Background and Choice Task on how long participants persisting at the math task. Based on past research we predicted an interaction effect of choice task and cultural background. Among European Canadians, we expected that choosing for the self would deplete self-regulation resources relative to not making choices, and that choosing for someone else would not cause self-regulation resource depletion. Asian-Canadians were expected to show self-regulation resource depletion more after choosing for others than after choosing for the self, relative to not making choices. Self-regulation resource depletion was operationalized as less persistence on the math task relative to the control condition.

A 2 (Cultural Background) x 3 (Choice Task) univariate ANOVA was conducted on time spent persisting on the math task. Time spent on the initial choice task and positive affect were entered as covariates. A main effect of Cultural Background emerged, $F(1, 126) = 5.68$, $p = .02$, $d = .43$, such that across choice tasks, European-Canadians persisted longer on the math task ($M = 24.05$, $SD = 11.64$) than did Asian-Canadians ($M = 20.20$, $SD = 8.73$). A main effect of Choice Task was also found, although this effect was only marginally significant, $F(2, 126) = 2.69$, $p = .07$, $\omega^2 = -.31$.

Because a difference in accuracy was found for Cultural Background, it was possible that facility with mathematics may have influenced persistence at the math task, thereby adding to error variance in this analysis. It is conceivable that these two cultural groups may have been exposed to differential levels of math in their academic pursuits. Thus, participants' academic majors were coded into 3 groups: little or no math exposure (e.g., English, Psychology), some exposure (e.g., Biology, Commerce), and heavy exposure to math (e.g., Physics, Chemistry). Those who indicated not having selected a major yet ($n = 14$) were coded as having little or no math exposure.

Math exposure was entered as a covariate into the 2 (Cultural Background) x 3 (Choice Task) ANOVA, along with amount of time spent on the choice task and positive affect. The main effect of culture remained, $F(1, 125) = 4.80$, $p = .03$, $d = .39$ (see Figure 1), and the main effect of Choice Task reached significance, $F(2, 125) = 3.00$, $p = .054$, $\omega^2 = -.31$ (see Figure 2). Post hoc tests were conducted to decompose the main effect of Choice Task. Across cultural groups, choosing for the self ($M = 20.00$, $SD = 9.00$) rendered participants significantly less persistent at the math task relative to choosing for someone else ($M = 22.94$, $SD = 11.26$), $t(87) = 2.08$, $p = .04$, $d = .45$, and to not making choices ($M = 22.81$, $SD = 10.38$), $t(90) = 2.35$, $p = .02$, $d = .50$. Across cultural background, choosing for the self depletes self-regulation resources relative to

not making choices, and choosing for others is not as depleting as is choosing for the self. These data suggest that choosing for the self requires more self-regulation resources than does choosing for someone else.

The interaction of Cultural Background and Choice Task was not significant, $F(2, 125) = 1.10$, $p = .34$, $\omega^2 = -.31$. However, in order to understand the results of this study in the context of past research, planned comparisons were executed examining the effect of Choice Task on persistence among cultural groups separately (see Table 1 for means). Research has shown that European-Americans persist less on a subsequent task after choosing for the self relative to not making choices (Vohs, Baumeister, Twenge et al., 2005). This effect was replicated in the current sample of European-Canadians, $t(38) = 2.41$, $p = .02$, $d = .78$. Choosing for the self ($M = 20.58$, $SD = 11.22$) was significantly more depleting than not making choices ($M = 25.30$, $SD = 10.67$).

Of additional interest in this study was the comparison between choosing for self and choosing for other. As hypothesized, European-Canadians were less persistent at the math task after choosing for the self than after choosing for the other ($M = 26.49$, $SD = 12.8$), $t(36) = 2.22$, $p = .03$, $d = .74$, suggesting the latter task is not as depleting of self-regulatory resources as the former. Indeed, persistence in the Other condition was no different from persistence in the No Choice condition, $t(36) < 1$, $d = .04$. This suggests that for European-Canadians, choosing for the self depletes self-regulatory resources, but choosing for someone else is not depleting. No differences across conditions emerged among Asian-Canadians in this sample (all ts < 1, ps $> .20$; see Figure 3). Given these analyses, the omnibus main effect of Choice Task seems to be driven primarily by the performance of European-Canadians.

Additional Analyses

Self-Construal Individual differences in interdependence were expected to influence the investment made in making choices for others. Cultural Background was used in this study as a proxy for differences in other-orientation. In order to test whether groups indeed differed in interdependence, scores from the interdependence subscale of Singelis' (1994) Self-Construal Scale were averaged to form one index (α = .66). A univariate ANOVA was conducted on average interdependence scores. Both Cultural Background and Choice Task were entered as factors because interdependence was measured after the Choice Task manipulation. The main effect of Cultural Background was not significant, $F(1, 127) = 2.17$, $p = .14$, $d = .26$; however, an unexpected interaction emerged, $F(2, 127) = 4.14$, $p = .02$, $\omega^2 = -.04$. Simple effect analyses revealed an effect of Cultural Background for the Self condition only. After making choices for the self, Asian-Canadians reported stronger endorsement of an interdependent self-construal ($M = 5.11$, $SD = .53$) than did European-Canadians ($M = 4.55$, $SD = .84$), $t(45) = 2.74$, $p = .009$, $d = .82$.

The reason for this result is unclear, although it is possible that Asian-Canadians may have experienced a rebound of interdependent feelings after choosing for the self. That is, if as predicted, Asian-Canadians typically endorse a more other-directed self-concept than do European-Canadians, it is possible that spending time making choices for the self caused a need to reassert a sense of interdependence among Asian-Canadians. Although this *post hoc* explanation is testable in future research, the placement of this scale *after* instead of *before* the dependent measure would enable a clearer examination of the main predictions regarding choice. No significant effects emerged for endorsement of independent self construal.

Self-Control Trait self-control was measured to investigate whether self-control differed between the two cultural groups. Responses to the 36 items (12 reverse-scored) of the self-control scale (Tangney et al., 2004) were averaged to form one index (α = .88), for which higher scores indicated lower self-control. A 2 (Cultural Background) by 3 (Choice Task) univariate ANOVA was conducted on the average scores. There was a slight trend toward European-Canadians endorsing lower self-control than Asian-Canadians (*M*s = 2.77 and 2.66, *SD*s = .52 and .45 respectively); however, the effect was not significant, $F(1, 127) = 1.54$, $p = .22$, $d = .22$. No other effects emerged (*F*s < 1). Thus there is little evidence from this measure that Asian-Canadians and European-Canadians differed in trait level self-control.

In sum, results replicate past research (Vohs, Baumeister, Twenge, et al., 2005) by showing that among European-Canadians, making choices for the self results in less persistence on a subsequent math task relative to not making choices. Persistence after choosing for a moderately close other was not diminished, showing no difference from not making choices among European-Canadians. The choice manipulation did not influence the persistence of Asian-Canadians on the math task. Overall, members of this group persisted for less time than did European-Canadians.

Discussion

Decision Fatigue and the Self

"This above all: to thine own self be true" (*Hamlet*, II.78).

This Shakespearian quote is often used in the West as advice to people attempting to make difficult decisions. To know oneself, including one's preferences is a top priority. The self is viewed as the source of meaning and behavior, therefore a coherent, consistent body of self-knowledge is imperative (Suh, 2002). Indications that one may not possess such self-knowledge represent a failure in this worldview. Results

of the current study show that making choices for the self depletes the self-regulatory resources of European-Canadians, relative to not making choices. However, choosing for someone else does not cause such depletion. As predicted, among European-Canadians, choosing for the self appears to be psychologically different from choosing for others.

Self-knowledge is important to being a member of Western society. Having a clear sense of self is positively related to psychological well-being and self-esteem, and negatively related to chronic self-analysis, rumination, and neuroticism (Campbell, Assanand, & Di Paula, 2003; Campbell et al., 1996). The process of making choices may be taxing if it signifies a test of self-knowledge in a particular domain. In the current study, people were asked to choose from among various paint color combinations. Regardless of whether people had strong color preferences before the experiment, the task of declaring these preferences may have made salient the need for self-knowledge. Deliberating among options and committing to a choice for the self, but not for someone else, may have involved the additional task of cementing self-knowledge, which then contributed to self-regulation resource depletion.

According to Karniol's (2003) self-as-distinct (SAD) model, a gap in knowledge regarding one's paint color preferences would have been filled by information about a generalized other's preference. Using generic information to infer one's own preferences may be a distressing solution in a culture whose members pride themselves on individuality and uniqueness (Triandis, 1996). Making a choice for someone else does not have the same psychological implications that choosing for the self does. When considering someone else's preferences, having a clear and highly developed knowledge base for that person may not be prioritized in an individualist culture, particularly if that someone is not very close to oneself.[1] Failing to properly

identify someone else's preferred option is not indicative of one's status as a good member of individualistic Western culture, and so making a choice for them does not deplete self-regulation resources.

Why is the self needed to make these choices? The types of choices that have been investigated are typically not binding, as in the current study, or have minute consequences, such as eating a chocolate that was less than ultimately desired (Iyengar & Lepper, 2000; see also Vohs, Baumeister, Twenge, et al., 2005). Why do people not merely select the first item they see? Selecting one option over another may be perceived as a statement to others that one knows oneself, including one's preferences in a given domain. In addition, people in the West are generally motivated to hold positive self-views (e.g., Crocker & Major, 1989; Heine et al., 1999). Investing effort to ensure that choices and their outcomes reflect positively on the self is one way to maintain this view.

Ample empirical evidence shows that large and small decisions are tied to the self. Major life decisions are influenced by implicit connections between the options available and positive feelings toward the self (Jones, Pelham, Carvallo, & Mirenberg, 2004; Pelham, Mirenberg, & Jones, 2002). Moreover, people seek to imbue things that are related to them with positive qualities. Research on the endowment effect shows that objects take on a special meaning when allied with the self (Kahneman, Knetsch, & Thaler, 1990; Lerner, Small, & Loewenstein, 2004). People assign greater monetary value to coffee mugs *after* they own the mugs, relative to before the mugs were in their possession (Kahneman et al.). Research on cognitive dissonance shows that when people select a painting to keep that they had previously identified as mediocre, they subsequently augment their opinion of the painting (Festinger & Carlsmith, 1959; Gerard & White, 1983). Thus, people tie possessions, be they tangible or opinions, to

the self. Possessing *this* painting or *this* coffee mug conveys information about the self to others and should therefore truly represent one's preferences, as well as reflect positively on the self.

What does this line of reasoning say about choosing for others? A choice made for someone else should reflect the other person's taste, either entirely or in addition to one's own preferences. Suppose a gift is selected that the chooser does not personally like. The item is not necessarily aligned with the chooser or the chooser's own preferences, and the chooser does not have to experience the gift. Except when choosing for intimate others, if the gift is a poor choice, it can easily be justified with the excuse that one does not know the other person very well. Because the self is not tied to this item, and a poor choice can be excused easily, it is not psychologically taxing to commit to making a choice for someone else.

When choosing for the self, and likely when choosing for intimate others, it is difficult to justify a poor choice as due to lack of knowledge. One is supposed to know one's own preferences, so when a poor choice is made one is forced to acknowledge a failure of self-knowledge and to live with the consequences. Knowing in advance that one will have to experience the outcome of a poor choice, as well as admit a lack of self-knowledge, may contribute to self-regulation resource depletion from choosing for the self but not from choosing for others.

Other-Orientation and Choice Depletion

We predicted that highlighting interpersonal concerns in the choosing for others condition would deplete self-regulatory resources among Asian-Canadian students. This group was selected to embody those high in other-orientation, whereas European-Canadians were thought to be low in other-orientation. By providing an interpersonal context for choice, we expected to highlight the social domain, a domain in which other-

oriented people may most often self-regulate. However, the choice task manipulation did not appear to affect self-regulatory resources of Asian-Canadians, so interpretation of these results is precarious.

There are a number of potential reasons why the manipulation did not affect persistence among Asian-Canadians in this study. One possible explanation stems from sample characteristics. Using cultural background as a proxy for other-orientation did not appear appropriate for two reasons. First, scores on a standard interdependence measure did not significantly differ between European-Canadian and Asian-Canadian participants. Second, Asian-Canadian participants were relatively acculturated. Forty-three percent of the 76 Asian-Canadians were born in Canada, and those who were born in East Asia immigrated to Canada an average of over nine years ago. It is still possible that other-orientation may be an important moderator of limited resource effects, although it appears that we have been unable to sufficiently test this hypothesis with the current sample.

Theoretically, it is possible that Asian-Canadians may have greater self-regulation resources than do European-Canadians by virtue of possessing multiple identities. Our acculturated sample of Asian-Canadians more aptly fits the description of being bicultural than East Asian monocultural. Research suggests that bicultural people have two selves, one that matches each cultural framework with which they engage, and that they switch to match their experience of self to the cultural context at hand (Hartitatos & Benet-Martinez, 2002; Hong, Benet-Martinez, Chiu, & Morris, 2003; Hong, Morris, Chiu, & Benet-Martinez, 2000; Ross, Xun, & Wilson, 2002). It is possible that regular practice at switching between selves to suit the context might strengthen self-regulatory resources, just as practice at self-regulating has been shown to buffer against temporary depletion effects induced in the laboratory (Muraven, Baumeister, &

Tice, 1999). By extension, switching among any set of multiple identities, such as stigmatized identities (Crocker & Major, 1989), might render people more resistant to depletion effects than those who do not routinely switch among identities. Future investigations directly addressing biculturalism and other types of multiple identities may provide insight into how self-regulation resources are developed and strengthened.

Limitations and Future Directions

In the current experiment participants choosing for others likely were aware that the others would not know what particular choices were made. There were no obvious consequences for making a poor decision for the other person. It is possible that when choosing for the other, it may have been evident that the other would not actually know how well participants chose for them. However, when choosing for the self, people would know that they had not been true to themselves if they did not put in effort to make the best choices they could. It is possible that choosing for others would have been depleting if participants knew that the others would see their selections. Future research should examine how variations in the importance of choice, including permanence of the outcome, affect self-regulation resources.

This study is an initial investigation into the effects of choosing for other people on self-regulation resources. Only one "other" condition was examined, and this person was identified as moderately close to the self. A person of moderate closeness was selected because participants were not expected to have too much information to consider, nor too little information to care when making a choice for them. Choosing for a moderately close other did not appear to cause self-regulation resource depletion in the current study. However, it is possible that choosing for a close relationship partner may result in self-regulation resource depletion.

Research shows that the accuracy of predicting others' thoughts is best when people are in a close relationship than when they do not know each other (Thomas & Fletcher, 2003). In addition, someone who is very close to the self should be represented by an elaborate cognitive structure as many experiences with that person likely provide much information for encoding. The SAD model of social prediction (Karniol, 2003) qualifies general statements about choosing for others by stating that the processes of identifying close versus non-close others' preferences are qualitatively different. When faced with a choice for close others, the theory posits that the process is very similar to the two-step model used when choosing for the self. It will be important for future research to examine the effects of choosing for others of various degrees of closeness to the self. As people choose for others who become increasingly closer to the self, it is conceivable that self-regulation resource depletion will increase as well.

Finally, while there is merit in investigating cultural differences, relying on cultural background to differentiate between participants introduces a host of extraneous differences between groups in addition to other-orientation. Obtaining a clearer differentiation between groups should be an objective for future research, perhaps by specifically priming interdependence. One advantage of priming is the ability to specify the precise variable influencing self-regulation resource depletion: interdependence. In addition, manipulating other-orientation would prevent the loss of valuable data, since many people who do not fit into dominant cultural groups are excluded from analyses.

Conclusion

These findings show that among European-Canadians, choosing for the self, but not choosing for others, drains psychological resources. People from individualistic cultures may tie their senses of self to the choices they make in their daily lives. Deliberating and choosing among options may highlight an uncomfortable void in self-

knowledge, and perhaps an opportunity to enhance the self. Resolving self-knowledge and ensuring that choices reflect positively on the self may be two aspects of choice for the self that lead to self-regulation resource depletion. Choosing for others may leave self-regulation resources intact because the self is not as involved with the choice.

Making choices is a common behavior in North American society. People are faced with more and more options every day for everything from cell phone service plans to jam flavors. The effect that making these choices has on one's psychological resources seems to differ depending on who will experience the outcome. When the self, but not someone else, is at stake, the act of making choices every day may take on a particularly important meaning, draining precious psychological resources in the process.

Footnote

[1] In interdependent cultures, the ingroup-outgroup distinction has important psychological implications (Markus & Kitayama, 1991; Triandis, 1995). It is plausible that people from interdependent cultures may be expected to have more elaborate knowledge structures for ingroup members of various degrees of closeness to the self, relative to outgroup members. The moderately close others examined in this study can be counted among ingroup members (e.g., friend, uncle). By virtue of their ingroup status, making choices for these moderately close others should be perceived as an important charge that has some implications for one's success as a member of interdependent cultures. Nonetheless, choosing for intimate others should be a more important task than choosing for moderately close others in both cultures. The importance and intimate nature of the close relationship should demand a lengthy search of the elaborate cognitive structure, as well as heighten the investment in selecting the best outcome, regardless of culture.

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Table 1

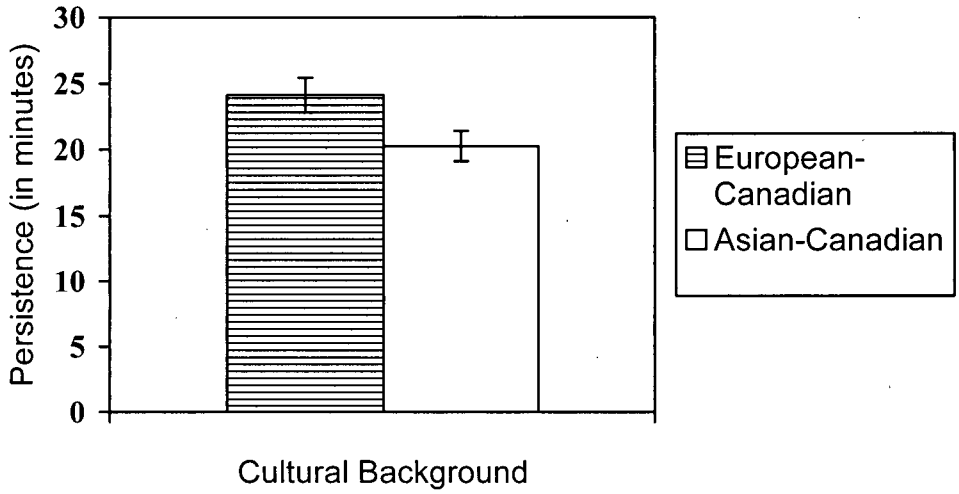
Summary Statistics as a Function of Choice Task and Cultural Background

		Cultural Background	
Choice Task	Total	European-Canadian	Asian-Canadian
Choosing for Self			
M	20.00_a	20.58_1	19.57_1
SD	9.00	11.22	9.00
N	48	20	28
Choosing for Other			
M	22.94_b	26.49_2	20.28_1
SD	11.26	12.81	9.36
N	42	18	24
No Choice			
M	22.81_b	25.30_2	20.82_1
SD	10.38	10.67	9.91
N	45	20	25

Means with different subscripts in the same series significantly differ from each other, $p < .05$.

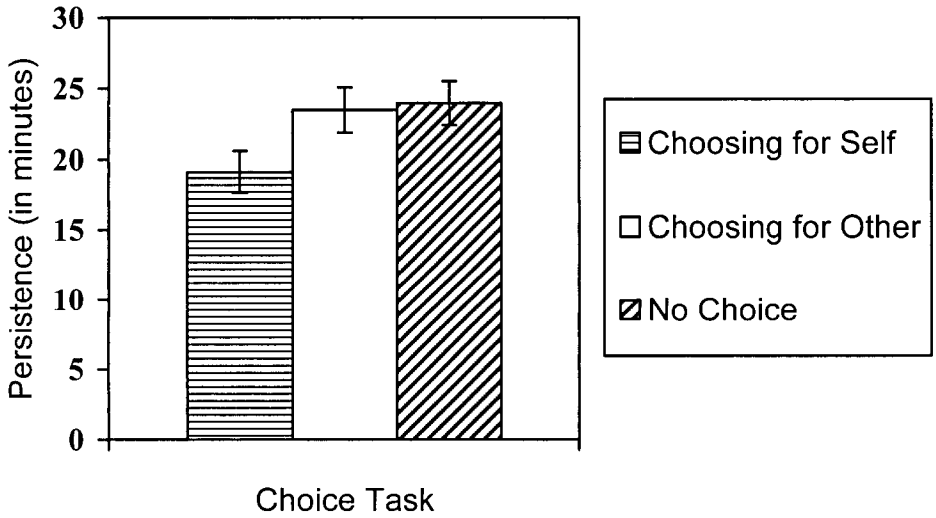
NB: These numbers reflect the raw data, without covariates; however, noted significant differences reflect adjustments for covariates. Covariates entered in analyses were positive affect, time spent on the choice task, and a measure of math training.

Figure 1



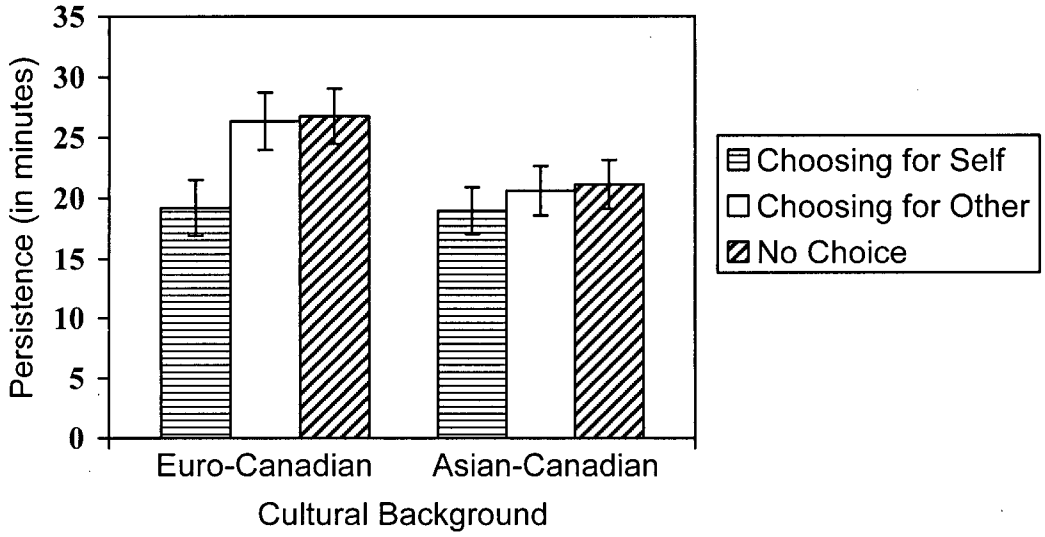
Persistence on math task as a function of cultural background.

Figure 2



Persistence on math task as a function of choice task.

Figure 3



Persistence on math task as a function of cultural background and choice task condition.