

# The Influence of Self-Construal on Impulsive Consumption

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Three studies investigated the impact of self-construal on impulsive consumption. Independents exhibited more impulsive consumption tendencies than did interdependents. A chronically accessible independent self-construal was positively associated with country-level beer consumption (study 1a) and state-level problem alcohol consumption (study 1b). Experimentally primed independents reported more positive attitudes toward immediate beer consumption than did interdependents, and this effect was mediated by state impulsivity. Peer presence increased impulsive consumption tendencies for independents but decreased them for interdependents (studies 2 and 3). The moderating effect of self-construal was linked to greater motivation to suppress impulsive tendencies for interdependents than for independents (study 3).

Impulsive consumption is a pervasive phenomenon that may have potentially serious consequences, particularly in the United States. Impulsive consumption has been estimated to account for over \$4 billion of U.S. annual sales (Mogelonsky 1998) and has been linked to the rapid increase in technologies that allow for virtually instant gratification through immediate access to goods and services (e.g., ATM machines, online shopping; see Hoch and Loewenstein 1991; Rook 1987; Vohs and Faber 2007). Although all impulsive consumption is not necessarily problematic, it is often associated with a variety of negative traits (immaturity, poor value system) and outcomes (financial problems, lower self-esteem, postpurchase dissatisfaction; Rook 1987; Rook and Fisher 1995). Some have suggested that impulse buying may at least partially explain the remarkably high debt-to-income ratios in the United States (Vohs and Faber 2007).

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*John Deighton served as editor and Jennifer Aaker served as associate editor for this article.*

*Electronically published October 10, 2008*

Impulsive consumption has been characterized as a conflict between the desire to consume and the willpower to resist it (Hoch and Loewenstein 1991). Willpower refers to the determination, strength of will, or self-control to resist a particular impulse and is presumably a function of the motivation and ability to exert such willpower. Recent research has focused on the ability aspect of willpower (self-regulation) and its relation to impulsive consumption (Vohs and Faber 2007). When self-control resources are depleted, people experience greater impulse-buying urges, and these urges can translate into increased impulse-buying behavior.

In this article, we investigate the motivational component of willpower. We look at the possible influence of self-construal—both at the cultural level and individual level—on impulsive consumption. Some correlational evidence indicates an interrelation between individualism/collectivism (independence/interdependence), trait buying impulsivity, and impulse-buying behavior (Kacen and Lee 2002). That research suggests that members of individualistic societies may exhibit more impulsive consumption than do members of collectivistic societies. However, this effect is not because interdependents feel less impulse but because they are more motivated to suppress their impulses than are members of individualistic societies. Although the results are correlational, and thus vulnerable to alternative explanations, they also have a number of implications. For one, cultures should differ on the extent to which they engage in particular impulsive consumption behaviors. A second is that, to the extent that the self is malleable (Mandel 2003; Markus and Kunda 1986) and subject to situational changes (Trafimow, Triandis, and Goto 1991), such situational changes in self-construal should have corresponding influences on impul-

sivity. A third implication is that situations that affect the motivation to suppress impulsive consumption tendencies should interact with self-construal in influencing impulsive consumption tendencies.

Three studies are presented that tested these possibilities and investigated their underlying processes. Studies 1a and 1b present results from two secondary data sets that link cultural orientation with a behavior often associated with impulsive consumption (alcohol consumption). Following that, two experiments are presented that manipulated self-construal via priming procedures to determine its impact on impulsive consumption tendencies. We also investigate the implications of our findings for previous research on the relation between peer presence and impulsive consumption, and the processes that mediate and moderate these effects.

## CULTURAL ORIENTATION, SELF-CONSTRUAL, AND IMPULSIVE CONSUMPTION

### Self-Construal

Self-construal refers to how people perceive themselves to be linked (or not) with other people (Markus and Kitayama 1991). People with predominantly independent self-construals (independents) see themselves as independent and autonomous, as distinct from the group, and tend to place high value on uniqueness, individual accomplishments, and achievement. People with predominantly interdependent self-construals (interdependents) see themselves as part of a larger group; value connectedness, conformity, and group harmony; and place a high value on safety and security. Numerous studies have confirmed the distinction as well as its effects. For example, compared to interdependents, independents are more willing to take social risks (Mandel 2003), are more promotion (gain) focused (Aaker and Lee 2001), and weight attitudes more heavily than subjective norms in behavioral decisions (Ybarra and Trafimow 1998).

Cultures also differ on which self-construal tends to be chronically accessible. For example, people in English-speaking countries such as the United States, Great Britain, and Australia tend to be more individualistic and less collectivistic than Asians, Africans, and Eastern Europeans (Oyserman, Coon, and Kemmelmeier 2002). It is also well documented, however, that individuals actually hold both types of self-construals simultaneously, and perceptions, judgments, and behavior are influenced by which self-construal happens to be activated at any given time (Trafimow et al. 1991). Thus, people in collectivistic (individualistic) societies hold both self-construals, but the interdependent (independent) self-construal is the one that tends to be chronically accessible, activated most often, and thus most likely to guide behavior. Moreover, self-construals can easily be manipulated so that even those with generally independent or interdependent self-construals can be induced to take the opposite perspective. By activating the self-construal of individuals within a culture through priming, researchers have

obtained many cross-cultural differences that had previously been witnessed only in between-nation comparisons (Aaker and Lee 2001; Gardner, Gabriel, and Lee 1999; for a review, see Oyserman and Lee 2008).

### Self-Construal and Impulsivity

The most recent conceptualizations of impulsive behavior propose that impulsive consumption results from the competition between pleasure-seeking goals that are activated upon exposure to a pleasurable consumption situation (e.g., eating cookies) and self-regulatory goals aimed at resisting the temporary urge. Thus, individual differences in impulsivity are explained as the differential accessibility of pleasure-seeking versus self-regulation goals (Puri 1996; Ramanathan and Menon 2006; Shiv and Fedorikhin 1999). Moreover, research suggests that when situational factors inhibit activation of self-regulatory goals, people are more likely to behave impulsively. For example, when processing resources are sufficiently available, both impulsives and prudents show similar levels of impulse control in choosing between a snack that elicits higher spontaneous affect but more negative cognitions (chocolate cake) and one that elicits lower spontaneous affect but more positive cognitions (fruit salad; Shiv and Fedorikhin 1999). When processing resources are constrained, however, impulsives are more likely to choose the more affect-laden product, but prudents' choice behaviors are unaffected. This difference occurs because resource constraints inhibit the activation of self-regulation goals for impulsives but not for prudents. In addition, when people are induced to suppress a desire for a hedonic product (e.g., cookies), impulsives increase their liking—but prudents decrease their liking—for the hedonic product over time. This occurs because the suppression of hedonic desires inhibits the activation of self-regulatory goals for impulsives but enhances the activation for prudents (Ramanathan and Menon 2006).

The aspects of interdependent and independent self-construals just reviewed have implications for the goals that tend to be chronically activated, which in turn have implications for how differences in self-construal may relate to impulsive behavior. For example, those with an interdependent self-construal tend to be more oriented toward goals of social cohesion and conforming to social norms, whereas those with an independent self-construal tend to be more oriented toward goals of expressing individuality and following their attitudes and emotions (Trafimow et al. 1991; Ybarra and Trafimow 1998). Thus, because impulsive consumption is often considered an unplanned and immature behavior that may reflect badly on the group in interdependent societies, people with an interdependent self-construal should be more likely to activate self-regulation goals, and thus suppress the impulsive urge, than people with an independent self-construal. Conversely, people with an independent self-construal should be more likely to activate pleasure-seeking goals, and thus be more likely to act in a manner consistent with those goals, than those with an interdependent self-construal.

Consistent with this reasoning, people with interdependent self-construals put more weight on subjective norms than attitudes when forming behavioral intentions, whereas people with independent self-construals put more weight on attitudes than subjective norms (Ybarra and Trafimow 1998). In addition, when people think a particular impulsive buying behavior is inappropriate, there is no relation between trait impulse-buying tendencies and impulse buying behavior (Rook and Fisher 1995). Research on self-construal and emotion has shown that consumers with an interdependent self-construal tend to rely less on their inner feelings to form their consumption decisions than do those with an independent self-construal, suggesting that interdependents are less likely to be under the force of their inner impulsive tendencies than are independents (Markus and Kitayama 1991). Studies have also shown that patience may be linked to self-construal. North Americans (chronic independent self-construal) tend to be more impatient, and thus discount the future more, than their East Asian counterparts (chronic interdependent self-construal). This suggests that consumers with an interdependent self-construal tend to postpone instant gratification more often than do those with an independent self-construal (Chen, Ng, and Rao 2005).

The thesis that self-construal affects consumption impulsivity has also received correlational support. Based on a multicountry survey of consumers in Australia, the United States, Hong Kong, Singapore, and Malaysia, an individualistic (vs. collectivistic) cultural orientation and an independent (vs. interdependent) self-construal were positively correlated with consumers' impulsive buying behavior (Kacen and Lee 2002). In addition, measures of trait buying impulsivity were more strongly related to self-reported impulsive buying behavior for those with an independent self-construal than for those with an interdependent self-construal. Presumably, independents were more likely to act on their attitudes (impulsive tendencies) than on their subjective norms, whereas interdependents were likely to suppress their impulsive tendencies and instead use subjective norms to guide their behavior.

### Impulsivity and Alcohol Consumption

In the studies reported here, we focus on alcohol consumption as an indicator of impulsive consumption. Impulsivity has consistently been linked with alcohol consumption, as have disorders for which impulse buying is often a precursor (e.g., compulsive consumption; see Ainslie 1975; Hirschman 1992; Rook 1987). Impulsivity has been shown to be inversely correlated with serotonin levels in people with alcohol use disorders (Soloff, Lynch, and Moss 2000) and positively correlated with drinking behavior in lab studies and with self-reported drinking frequency (Acton 2003). Alcohol consumption has also frequently been linked with various traits that are closely related to impulsivity, including need for stimulation (Gerbing, Ahadi, and Patton 1987), low self-esteem (O'Guinn and Faber 1989), sensation-seeking (Grau and Ortet 1999), lack of willpower (Hoch

and Loewenstein 1991), and fantasy (O'Guinn and Faber 1989).

### Peer Presence and Self-Regulation

We were also interested in investigating the extent to which self-regulatory mechanisms may underlie self-construal effects, particularly with respect to norm and goal activation. One context in which norm and goal activation may differ as a function of self-construal is the effect of peer presence on impulsive consumption. Recall that people whose independent self-construal has been activated tend to value uniqueness and acting on their inner feelings. Because the presence of others is likely to enhance preexisting dispositions (Zajonc 1965), peer presence should increase impulsive consumption tendencies for those whose independent self-construal has been activated. In addition, acting on one's spontaneous feelings may itself be considered normatively appropriate in predominantly individualistic societies, and the presence of one's peers may further condone the behavior (e.g., campus binge drinking). Consistent with this proposition, the presence of peers has been shown to increase impulsive consumption tendencies, at least when study participants are predominantly American, and thus likely to have chronically independent self-construals. For example, the presence of peers (friends) has been shown to increase food consumption (de Castro 1994; de Castro and de Castro 1989) compared to eating alone. In an experiment that manipulated whether participants imagined shopping alone or with peers, participants reported greater urges to purchase when they imagined shopping with peers than when they imagined shopping alone. However, this effect was observed only when the peer group was considered more cohesive (best friends vs. coworkers; Luo 2005). This latter finding suggests that these peer-presence effects may be dependent upon the nature of the peer group.

But consider people who hold predominantly interdependent self-construals. They value connectedness, conformity, and adherence to group norms. Thus, in order to conform to group norms, interdependents may tend to suppress their impulsive consumption tendencies more than independents do (Kacen and Lee 2002). Because the presence of others is likely to enhance preexisting dispositions (Zajonc 1965), peer presence should enhance the activation of self-regulation goals for those whose interdependent self-construal has been activated. More specifically, the salience of peers should increase the salience of group norms for those with an interdependent self-construal, and thus activate self-regulatory control mechanisms to a greater degree relative to the absence of peers. In this case, peer presence should decrease impulsive consumption tendencies for interdependents, an effect opposite of the one expected for independents.

Finally, we were interested in testing more directly the hypothesis that the differential effects of peer presence on impulsive consumption as a function of self-construal are motivation-based. Individual differences in impulsive consumption have been linked to differences in the motivation

and ability to suppress or control momentary urges to seek short-term pleasure at the expense of long-term consequences, and reducing self-regulatory resources increases impulsive consumption tendencies (Vohs and Faber 2007). We argued that the interactive effects of self-construal and peer presence on impulsive consumption tendencies occur because peer presence increases the motivation to suppress impulsive tendencies for interdependents, but decreases the motivation to suppress for independents. But suppose that people's ability to act on their goals to suppress their impulsive urges is constrained. In this case, the interactive effect of self-construal and peer presence should be reduced or eliminated, and interdependents should respond to the presence of peers in much the same way as independents should.

### Overview of the Studies

In studies 1a and 1b, we used secondary data to examine the relation between self-construal and impulsive consumption tendencies. In study 1a, we used country-level data to test the hypothesis that an independent self-construal (measured as level of individualism) will be positively correlated with per capita beer consumption. In study 1b, we used U.S. state-level data to test the hypothesis that individualism will be positively correlated with self-reported levels of problem alcohol consumption. In studies 2 and 3, we experimentally manipulated self-construal to replicate these findings and investigate their underlying processes. In study 2, we test the hypothesis that independents will exhibit greater impulsive consumption tendencies than interdependents, but that peer presence will also interact with this effect. Specifically, peer presence is expected to increase impulsive consumption tendencies for independents but decrease impulsive consumption tendencies for interdependents, and these effects are expected to be mediated by state (felt) levels of impulsivity. In study 3, we test the hypothesis that motivation to suppress impulsive consumption tendencies can at least partially explain the self-construal  $\times$  peer-presence interaction by manipulating the availability of self-regulatory resources.

### STUDIES 1a AND 1b

#### Method

*Study 1a.* Per capita beer consumption data (in liters) of 42 countries from 1999 were obtained from Plato Logic (<http://www.platologic.co.uk/worldbeer.htm>) and served as the criterion variable. Data for the primary predictor variable, country-level individualism, were obtained from the Geert Hofstede Cultural Dimensions Web site (Hofstede 2005). These data include updates from the most current studies available. Individualism and collectivism are considered to be cultural level representations of independent and interdependent self-construals, respectively (Markus and Kitayama 1991; Triandis 1995). Because Hofstede conceives of individualism and collectivism as opposite poles

of a continuum, a country that is more individualistic is thus also less collectivistic, and vice versa (Hofstede 2001, 2005).

We also included data that might plausibly be related to either individualism or beer consumption, and thus might render the individualism-beer consumption relation spurious. Countries differ on many cultural dimensions other than individualism (Oyserman et al. 2002). Because many studies have divided countries into groups based on only one variable (individualism) and assumed that differences in the criterion variable are caused by individualism, researchers have no way of knowing whether it is that predictor variable, or perhaps some other cultural variable, that influences individualism. To account for this possibility, we included the other cultural orientation variables provided by Hofstede (2005), which are power distance, masculinity, and uncertainty avoidance, to use as statistical controls (long-term orientation was not included because scores were provided for only 18 of the 42 countries in our data set). Other variables that were included are income (Ornstein and Hanssens 1985), income growth (Triandis 1995), affect (Diener and Suh 2003; Markus and Kitayama 1991), average country temperature (Parker 1997), and religiosity. Data on country-level per capita income and income growth (1994–2004) were obtained from the United Nations Web site (United Nations Statistics Division 2006; see Briley and Aaker [2006] for additional details), life-satisfaction data (as a proxy for affect) were obtained from World Values Study Group (1994; see also Diener and Suh 2003), temperature data were obtained from Parker (1997), and data on religiosity were obtained from Islamicweb.com (2007). This Web site compiles data from various sources that pertain to the percentage of the population of a country that is Muslim. Muslims make up one of the largest religious groups in the world and also have very strict prohibitions against alcohol consumption.

*Study 1b.* Data pertaining to problem alcohol consumption published by the Centers for Disease Control and Prevention (CDC) were used in our analyses (CDC 2003, 2004). These data break out the prevalence of particular alcohol consumption problems by U.S. states. We looked at three measures of problem alcohol consumption: percentage of teens who reported drinking alcohol in the last month, percentage of teens who reported heavy drinking in the last month, and percentage of adults who reported binge drinking (five or more drinks on one occasion) in the last month. These data were then combined with state-level scores on individualism (Vandello and Cohen 1999). Data on temperature and per capita income were also obtained to serve as statistical controls.

### Results and Discussion

We expected that level of individualism would be positively correlated with per capita beer consumption and problem alcohol consumption. To test these hypotheses, we first combined all of the data described previously for each study into two data sets (1a and 1b).

For the country-level analysis, to determine appropriate control variables we first regressed per capita beer consumption on all eight potential control variables. Only temperature ( $\beta = -.32, p < .04$ ) and masculinity ( $\beta = .26, p < .07$ ) were significant at  $p < .10$ , and thus retained as controls. Next, to determine the independent contribution of individualism to the prediction of beer consumption, we regressed beer consumption on individualism, temperature, and masculinity simultaneously. As expected, individualism was a significant predictor of beer consumption in the second step ( $\beta = .38, p < .01$ ). Temperature was also a significant predictor ( $\beta = -.37, p < .02$ ) but masculinity was not ( $\beta = .20, p = .11$ ).

For the state-level analysis, we conducted the same type of regression analyses. In separate analyses, we regressed each of the three criterion variables on the control variables and individualism. Consistent with predictions, individualism was positively correlated with teen drinking ( $\beta = .83, t(28) = 5.07, p < .002$ ), teen heavy drinking ( $\beta = .44, t(42) = 3.20, p < .003$ ), and adult binge drinking ( $\beta = .42, t(46) = 3.47, p < .001$ ). Of the control variables, only income ( $\beta = .27, p < .07$  for teen drinking;  $\beta = .37, p < .005$  for adult binge drinking) and temperature ( $\beta = .50, p < .008$  for teen drinking) were significant predictors.

Studies 1a and 1b provide preliminary evidence on the relation between self-construal and alcohol and beer consumption tendencies, and also rule out several alternative explanations for this relation. The relation holds for both cultural level (country) and subcultural level (U.S. states) comparisons, and in general the effect sizes are substantial. Although the real-world nature of the data enhances external validity, however, there are clear threats to internal validity. The correlational nature of the data makes confident claims of causality problematic, and this is compounded by the fact that the studies used secondary data, thus limiting our ability to at least measure and statistically control for alternative explanations. The following two studies address these limitations by experimentally manipulating self-construal and investigating likely mediators and moderators of the effect. In particular, we look at the implications of self-construal for the relation between peer presence and impulsive consumption.

## STUDY 2

### Method

**Participants and Design.** Participants were 128 undergraduate business students (66 men, 62 women) from the University of Texas at San Antonio who were above the legal drinking age and participated in return for partial course credit. All participants provided informed consent. The design was a 2 (interdependent vs. independent)  $\times$  2 (peer presence vs. no peer presence) between-subjects design.

**Procedure.** As part of what was billed as two studies, participants completed the Hamilton and Biehal (2005, study

1) priming task, which was intended to activate either an independent or interdependent self-construal. In the priming procedure, participants were asked to take 5 minutes to write down all of the thoughts they had after being told either "Remember, enjoying your life is what it is really all about" (independent) or "Remember, enjoying relationships with your family or friends is what it is really all about" (interdependent). A separate study ( $n = 36$ , same participant pool) that administered the six-item scale used by Hamilton and Biehal to measure independent and interdependent cognitions confirmed that the manipulation was successful ( $F(1, 34) = 14.29, p < .001$ ).

As ostensibly part of the second study, participants were given the peer-presence instructions. Half of the participants were told to "imagine a group of your close friends has decided to go out to a local bar to celebrate a friend's new job" prior to completing the beer attitude measures, and the other half received no such instructions. Assignment to priming and peer-presence conditions was random. Following that, participants indicated their feelings about drinking beer at that moment and completed scales that measured their state impulsivity, risk attitudes, current affect, gender, knowledge of beer, and beer drinking experience. Risk attitudes (Mandel 2003) and affect (Diener and Suh 2003) were measured to rule out alternative explanations for the mediating effects. Finally, participants were asked their thoughts on the study purpose, and then debriefed. No one correctly guessed the research purpose.

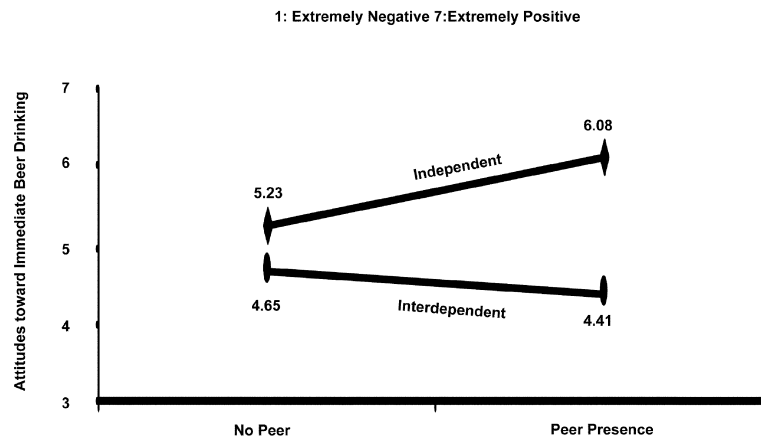
**Measures.** Participants' attitudes toward drinking beer at that moment were measured with three items using 7-point scales anchored by good/bad, like/dislike, and positive/negative. The three items were sufficiently correlated to form a composite score ( $\alpha = .88$ ). Consumption impulsivity was measured with a 10-item Consumer Impulsivity Scale (Puri 1996;  $\alpha = .84$ ), which has participants rate on a 7-point scale the extent to which various adjectives (e.g., impulsive, spontaneous, restrained) describe themselves, and is considered a measure of trait impulsivity. To capture state impulsivity, we modified the instructions by asking participants to indicate how the adjectives described them "at this moment." Risk attitudes were measured with a 12-item scale ( $\alpha = .70$ ; Weber, Blais, and Betz 2002) and affect was measured with a 10-item scale ( $\alpha = .76$ ; Pham et al. 2001). All scales were averaged to form composite indexes.

### Results and Discussion

**Tests of Hypotheses.** We expected that independents would exhibit greater impulsive consumption tendencies than interdependents, but this main effect would be qualified by a self-construal  $\times$  peer-presence interaction: peer presence should increase impulsive consumption tendencies for independents but decrease them for interdependents. To test these possibilities, we conducted a full factorial ANOVA on the beer attitude composite score, with self-construal and peer presence as the two independent factors. The results of this analysis can be seen in figure 1. There was a main

FIGURE 1

STUDY 2: EFFECT OF SELF-CONSTRUAL AND PEER PRESENCE ON ATTITUDES TOWARD IMMEDIATE BEER DRINKING



effect of self-construal on beer consumption attitudes ( $F(1, 124) = 23.75, p < .001$ ). As expected, participants primed with an independent self-construal perceived consuming beer at that moment to be more attractive ( $M = 5.65, SD = 1.43$ ) than did those primed with an interdependent self-construal ( $M = 4.53, SD = 1.43$ ). However, this effect was qualified by a self-construal  $\times$  peer-presence interaction ( $F(1, 124) = 5.71, p < .03$ ). As predicted, for independents, immediate beer drinking attitudes were more positive under peer-presence conditions ( $M = 6.08$ ) than under no-peer-presence conditions ( $M = 5.23; t(61) = 2.58, p < .001$ ). However, for interdependents, contrary to expectations, no effect of peer presence on immediate beer drinking attitudes was observed ( $M = 4.41$  vs.  $4.65; t(65) = -0.78, p = .44$ ).

Additional analyses indicated that in no-peer-presence (control) conditions, independents expressed more positive beer drinking attitudes ( $M = 5.23$ ) than did interdependents ( $M = 4.65; t(61) = 1.72, p = .09$ ), although this difference only approached significance. There was no main effect for peer presence ( $p > .20$ ). Gender, beer knowledge, and beer drinking experience did not relate directly to nor did they interact with the focal variables.

**Mediating Mechanisms.** We also expected that state impulsivity would mediate the effect of self-construal on beer drinking attitudes. Regression analyses were used to test this proposition (Baron and Kenny 1986). In support of predictions, the effect of self-construal on beer consumption attitudes was significant ( $\beta = 0.56, t(124) = 4.87, p < .001$ ), the effect of self-construal on consumption impulsivity was significant ( $\beta = 0.56, t(126) = 2.77, p < .007$ ), and when consumption impulsivity and self-construal were both included in the regression, the effects of self-construal ( $\beta = 0.49, t(123) = 4.21, p < .002$ ) and consumption impulsivity ( $\beta = 0.19, t(123) = 2.47, p < .03$ ) were both significant. A Sobel (1982) test indicated that the inclusion of impulsivity in the regression significantly reduced the effect

of self-construal on beer consumption attitudes ( $Z = 1.92, p = .05$ ). Thus, consumption impulsivity partially mediated the effect of self-construal on the beer consumption tendencies.

Based on Muller, Judd, and Yzerbyt (2005), we conducted further analyses to test for a mediated moderation effect. First, when attitudes toward immediate beer drinking were regressed on self-construal, presence of peers, and their interaction, the two-way interaction was significant ( $\beta = 0.27, t(124) = 2.39, p < .02$ ). Second, when the mediator (state impulsivity score) was regressed on self-construal, presence of peers, and their interaction, the effect of self-construal was positive and approached significance ( $\beta = 0.13, t(124) = 1.82, p = .08$ ). Last, when the beer drinking attitudes were regressed on self-construal, presence of peers, consumption impulsivity, and both two-way interactions, the interaction between the mediator and moderator was significant ( $\beta = -0.16, t(122) = -2.15, p < .05$ ). This analysis confirms that the moderating effect of self-construal on peer presence is mediated by state consumption impulsivity.

We examined two alternatives to consumption impulsivity as potential mediators: risk attitudes and general affect. Self-construal has been shown to relate to risk taking (Mandel 2003), and alcohol consumption may be considered a risky behavior. Self-construal may also be related to affect (Diener and Suh 2003), and alcohol consumption may be considered a pleasurable activity. However, correlational analyses ruled out both constructs as potential mediators. Risk attitudes were not significant predictors of immediate beer consumption attitudes ( $r = .15, p > .10$ ), nor was general affect ( $r = .16, p > .10$ ).

The results of study 2 establish that self-construal has a causal effect on impulsive consumption tendencies (immediate beer drinking attitudes) and that this effect is mediated by state impulsivity. Perhaps more important, we also showed that these results have implications for the effects of contextual or situational factors on impulsive consump-

tion tendencies. When the beer drinking context included the presence of peers, impulsive consumption tendencies increased for independents but not for interdependents, and this interaction was shown to be mediated by state impulsivity.

We argued that both the general main effect of self-construal on impulsive consumption tendencies and its moderating effect on peer presence occur because peer presence reduces the motivation to suppress impulsive consumption tendencies for independents but increases the motivation to suppress for interdependents. Thus, we expected that peer presence would activate pleasure-seeking goals for independents and thereby decrease their motivation to suppress impulsive consumption tendencies (and thus produce more positive immediate beer drinking attitudes). For interdependents, we expected that peer presence would activate conformity (not standing out) goals, and thus increase their motivation to suppress impulsive consumption tendencies. Although study 2 provides results that partially support this reasoning, evidence for a motivational component is at best indirect.

In study 3, we provide a more direct test that differential motivation as a function of self-construal can account for the pattern of peer presence effects noted in study 2. To do so, we manipulated the availability of self-regulatory resources through a resource-depletion manipulation. We expected that interdependents would be more motivated to suppress their impulsive consumption tendencies when peer presence is made salient than when it is not. If so, reducing interdependents' abilities to act on this motivation should reduce the peer-presence effect. Thus, peer-presence conditions should increase impulsive consumption tendencies for interdependents under resource-depletion conditions compared to nondepletion conditions. For independents, who we do not expect to be motivated to suppress impulsive consumption tendencies (and in fact are more motivated to behave impulsively), resource-depletion conditions should have relatively little effect. Thus, under no-depletion conditions, we expect the same two-way interaction predicted in study 2. Under resource-depletion conditions, however, we expect this two-way interaction to be eliminated, and thus the pattern of effects as a function of peer presence for interdependents should more closely resemble those of independents.

We also made some changes to address alternative explanations for the effects. First, we changed the peer-presence manipulation (discussed presently). In study 2, for interdependents, we expected that making peer presence salient would result in a greater motivation to suppress impulsive consumption tendencies compared to when peer presence was not made salient. We did not find support for this prediction: peer presence had no effect on impulsive consumption tendencies for interdependents. However, it is possible that our manipulation was not strong enough to produce a difference. Thus, we changed the manipulation slightly to address this issue. Second, we also measured participants' gender and their level of separateness/con-

nectedness. Norms for drinking may differ between men and women, and separateness/connectedness has been shown to mediate the relation between individualism and responses to advertisements (Wang et al. 2000).

## STUDY 3

### Method

*Participants and Design.* Participants were 223 undergraduate business students (88 men, 135 women) from the University of Texas at San Antonio who were above the legal drinking age and participated in return for partial course credit. All participants provided informed consent. The design was a 2 (interdependent vs. independent)  $\times$  2 (peer presence vs. no peer presence)  $\times$  2 (thought suppression vs. no thought suppression) between-subjects design.

*Procedure and Measures.* Participants were told they were taking part in three studies. As part of the first study, participants completed the same self-construal priming task used in study 2. As ostensibly part of a second study, participants were given a thought-suppression task (described presently) that has been shown to deplete self-regulatory resources. Next, as ostensibly part of a third study, participants were given the same peer-presence manipulation used in study 2, but with one change: in no-peer-presence conditions, participants were told to "imagine you have decided to go to a local bar by yourself" rather than being given no instructions at all, as was the case in study 2. Assignment to priming, peer-presence, and thought-suppression conditions was random. Participants then indicated their attitudes toward drinking beer at that moment, gender, beer knowledge and experience, and level of chronic separateness/connectedness. Finally, participants were asked their thoughts on the study purpose, and then debriefed. No one correctly guessed the research purpose.

The thought-suppression manipulation was taken from Vohs and Faber (2007; see also Wegner 1989). Participants were asked to spend 5 minutes writing down everything that entered their minds. In thought-suppression conditions, they were given explicit instructions not to think about a white bear. They were told that if they did happen to think about a white bear, they should make a check mark to one side of the page and continue writing. In no-suppression conditions, participants were told they could think of anything they wanted, including a white bear. Participants' attitudes toward beer drinking at that moment were measured with the same three items used in study 2 ( $\alpha = .88$ ). Chronic self-construal (separateness/connectedness) was measured with a 14-item scale ( $\alpha = .74$ ) developed by Wang et al. (2000).

### Results and Discussion

*Tests of Hypotheses.* We expected a three-way interaction between self-construal, peer presence, and thought suppression, such that the interaction between self-construal

and peer presence on immediate beer consumption attitudes would be more pronounced under no-thought-suppression conditions than under thought-suppression conditions. Under no-suppression conditions, we expected the same two-way interaction predicted in study 2. For independents, peer-presence conditions should produce more positive immediate beer drinking attitudes than should no-peer-presence conditions. However, peer presence should have the opposite effect for interdependents: peer-presence conditions should produce less positive beer drinking attitudes than should no-peer-presence conditions. In contrast, we expected that thought-suppression conditions would eliminate this interaction.

To test these possibilities, we conducted a full factorial ANOVA on the beer attitude composite score with self-construal, peer presence, and thought suppression as the three independent factors. The results of this analysis can be seen in figure 2. As expected, the three-way interaction was significant ( $F(1, 215) = 4.29, p < .05$ ). To decompose this interaction, we ran separate ANOVAs on the two thought-suppression conditions. In accord with predictions, the two-way interaction between self-construal and peer presence emerged for no-thought-suppression conditions ( $F(1,108) = 9.56, p < .05$ ). As the left panel of figure 2 shows, for independents, peer-presence conditions produced more positive attitudes toward immediate beer drinking ( $M = 5.56$ ) than did no-peer-presence conditions ( $M = 4.70$ ;  $t(56) = 2.29, p < .05$ ). In contrast, for interdependents, peer-presence conditions resulted in less positive attitudes toward immediate beer drinking ( $M = 3.19$ ) compared to no-peer-presence conditions ( $M = 3.98$ ;  $t(57) = -6.43, p < .0001$ ). As the right panel of figure 2 shows,

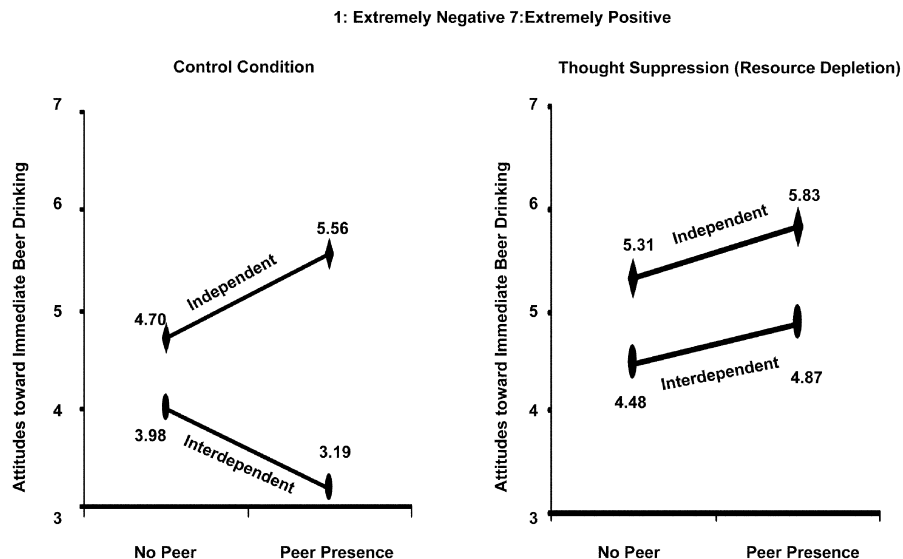
however, under thought-suppression conditions, this two-way interaction was eliminated ( $F < 1$ ). Peer presence had no effect for either independents or interdependents (both  $p$ 's  $> .15$ ). Thus, for interdependents, peer presence had less of an effect on immediate beer drinking attitudes under resource-depletion conditions than under nondepletion conditions, as evidenced by the peer presence  $\times$  thought suppression interaction for interdependents ( $F(1, 108) = 4.39, p < .05$ ).

The ANOVA also indicated a main effect for self-construal. Independents expressed more positive immediate beer drinking attitudes ( $M = 5.35$ ) than did interdependents ( $M = 4.13$ ;  $F(1, 215) = 44.40, p < .001$ ), and this was true under both thought-suppression ( $F(1, 107) = 12.46, p < .005$ ) and no-thought-suppression ( $F(1,108) = 34.17, p < .001$ ) conditions. Thus, under no-thought-suppression conditions, independents displayed more impulsive consumption tendencies than did interdependents, replicating the findings from studies 1 and 2. Additional analyses indicated that for no-peer-presence conditions, the main effect of thought suppression was significant. Those in thought-suppression conditions exhibited more positive attitudes toward immediate beer consumption ( $M = 4.90$ ) than did those in the no-thought-suppression conditions ( $M = 4.34$ ;  $t(111) = 1.87, p = .06$ ). These results are consistent with research showing that self-regulatory depletion increases impulsive consumption tendencies (Vohs and Faber 2007).

To test plausible alternative explanations, we included gender and separateness/connectedness in the analyses. The results indicate that gender had a main effect on immediate beer drinking attitudes ( $F(1,214) = 5.11, p < .05$ ), but its inclusion in the analyses did not alter the predicted inter-

FIGURE 2

STUDY 3: EFFECT OF SELF-CONSTRUAL, PEER PRESENCE, AND THOUGHT SUPPRESSION ON ATTITUDES TOWARD IMMEDIATE BEER DRINKING



actions, nor did it interact with any of the other variables. There was no effect (main or interactive) of separateness/connectedness. There were also no effects of beer knowledge or drinking experience.

The results of study 3 support our theorizing that the interaction between self-construal and peer presence is related to the motivational effects of peer presence: peer presence increases the motivation to suppress impulsive consumption tendencies for interdependents but decreases it for independents. This pattern of effects was noted under no-thought-suppression (control) conditions. However, when the ability to suppress these impulsive tendencies was compromised through a resource-depletion manipulation, this interaction was eliminated and interdependents resembled independents in their reactions to peer presence. Thus, we showed that the motivation factor for interdependents under peer-presence conditions is only effective when sufficient self-control resources are available.

Although the same general two-way interaction between peer presence and self-construal noted in study 2 was replicated in no-thought-suppression conditions, the exact patterns deviated slightly between the two studies. In both studies, peer presence increased impulsive consumption tendencies for independents, as predicted. In contrast, for interdependents, also as predicted, peer presence reduced impulsive consumption tendencies for interdependents, but this was true only in study 3. In study 2, peer presence had no effect on impulsive consumption tendencies. The different findings may have resulted because we strengthened the manipulation in study 3, or the nonsignificant results of study 2 may have been anomalous. In this regard, it may be worth noting that we have found a similar reduction in impulsive consumption tendencies for interdependents under peer-presence conditions in other studies (Zhang and Shrum 2008).

## GENERAL DISCUSSION

The results of the studies reported here converge on the conclusion that self-construal has a causal influence on impulsive consumption. In two laboratory experiments, participants whose independent self-construals were activated reported more positive attitudes toward consuming beer at that moment than did those whose interdependent self-construals were activated, and this effect was shown to be mediated by the felt (state) level of impulsivity induced by the self-construal manipulation. We argued that this main effect of self-construal was likely due to greater motivation to suppress impulsive consumption tendencies on the part of interdependents relative to independents. Interdependents tend to be more concerned with fitting in and not embarrassing group members, and focus on social norms; independents tend to focus on uniqueness and standing out, and act more on their internal feelings.

Based on this theorizing, we also expected these general processes to have implications for the effects of other factors on impulsive consumption, particularly the effects of peer presence (de Castro 1994; Luo 2005). Because the presence of peers may have different effects on interdependents than

on independents, we expected self-construal to moderate the peer presence–impulsive consumption relation. Consistent with these expectations, we found that peer presence increased impulsive consumption tendencies for independents but decreased impulsive consumption tendencies for interdependents, although we found this decrease was significant only in study 3. Finally, we found support for our contention that motivation to suppress impulsive consumption tendencies drives the peer-presence effects. When we reduced the ability of interdependents to suppress their impulsive consumption tendencies that were heightened under peer-presence conditions, the interactive effect of peer presence was eliminated and interdependents and independents reacted similarly to the presence of peers.

The research we have reported makes contributions in several areas. First, it provides causal evidence of the relation between self-construal and impulsive consumption through the use of priming procedures, confirming correlational findings from previous research (Kacen and Lee 2002). This confirmation is important because, as Oyserman et al. (2002) indicate in their exhaustive review, it is risky to assume that differences on some criterion variable are specifically the result of measured differences in self-construal (at the cultural or individual level). These differences may be the result of such things as cultural differences in scale usage, socially desirable responding (Lalwani, Shavitt, and Johnson 2006), or other unmeasured cultural differences (e.g., other cultural values). Priming self-construal addresses many of these concerns (Oyserman and Lee 2008).

A second contribution of our research pertains to the relation between peer presence and impulsive consumption. Research has suggested that peer presence increases impulsive consumption tendencies. Given the cultural differences in impulsive consumption tendencies, however, we speculated that this relation may differ as a function of self-construal. We provided evidence that peer presence actually decreases impulsive consumption tendencies for interdependents (study 3).

A third contribution of our research is a better understanding of the processes underlying the self-construal and peer-presence effects. We theorized that the differences in impulsive consumption as a function of self-construal may be due to greater motivation to suppress impulsive consumption tendencies by interdependents compared to independents. We tested this assumption indirectly through the peer-presence manipulation. We expected that peer presence would make these differences even more salient (interdependents less likely to suppress, interdependents more likely) and we provided evidence consistent with these propositions. More directly, we also manipulated self-regulatory resources and showed that when the ability of interdependents to regulate their impulses is constrained, interdependents show effects of peer presence that are similar to independents. In the context of this latter investigation, we also replicated the general findings of Vohs and Faber (2007), which showed that self-regulatory resource depletion increases impulsive consumption tendencies.

Finally, another contribution of our research is the blending of laboratory and secondary data, which has several advantages. For one, it provides important convergent validity across multiple methods and multiple levels of measurement. Second, it provides an oft-missing external validity component to the research (see Calder, Phillips, and Tybout 1982; Lynch 1982). Third, the combination of the cultural level data, subcultural level data, and priming data allows us to rule out some plausible alternative explanations that might otherwise be difficult to account for with only laboratory data. We discuss this in more detail in the following section.

Our general pattern of findings is consistent with other research on both cultural orientation and impulsive consumption. For example, Western-primed participants exhibit more impatience in delaying consumption gratification than Eastern-primed participants (Chen et al. 2005). In terms of the effects of peer presence, research shows that the effects of cultural orientation on such things as the persuasiveness of ads (Han and Shavitt 1994) and overall judgments (Torelli 2006) tend to be stronger when the consumption situations are public than when they are private. Our findings are also very consistent with the motivation view of impulsive consumption and closely resemble the results reported by Ramanathan and Menon (2006) and Shiv and Fedorikhin (1999). Ramanathan and Menon showed that the same situational factor (suppressing a pleasure-seeking goal) can produce different outcomes to the extent that the factor relates to differential motivations and goals for different groups (e.g., impulsives vs. prudents). In the same manner, our research shows that the same situational factor (peer presence) has different effects on independents and interdependents, and we argued that this is because peer presence activates different goals based on type of self-construal.

Our research is also consistent with the resource view of impulsive consumption (Baumeister, Heatherton, and Tice 1994; Vohs and Faber 2007). In general, people are motivated to regulate their impulsive consumption tendencies, and we show that this motivation may differ as a function of cultural orientation. However, despite this motivation, when self-regulatory resources are taxed, impulsive consumption tendencies may win out.

### Alternative Explanations and Future Research Directions

Through a series of analyses, we attempted to rule out several possible alternative explanations for the relations between cultural orientation, self-construal, and beer and problem alcohol consumption (e.g., income, religion, climate, risk attitudes, gender, separateness/connectedness, affect). Although other alternative explanations are possible for some specific data patterns in some studies, these explanations have difficulty in parsimoniously accounting for all of our findings. For example, one alternative explanation is that different social norms associated with alcohol consumption are responsible for the relation between cultural

orientation and beer consumption. This view argues that because alcohol consumption is strictly controlled in the United States, and thus may be regarded as a “forbidden fruit,” college students may regard beer drinking as socially attractive. In collectivistic societies, however, the alcohol consumption code might not be as strict as that of the United States, so it may be less socially attractive for college students to consume beer. This alternative might explain the cross-country comparison results, but has difficulty explaining why different states within the United States show different levels of beer consumption as a function of self-construal, and this difference is noted not only in the alcohol consumption of young consumers but also of adults. In addition, this alternative cannot account for the priming effects found in the subsequent experiments.

Another alternative explanation is related to the regulatory-focus thesis proposed by Aaker and Lee (2001), which posits that self-construal influences regulatory focus (Higgins 1998): independents tend to be promotion focused and interdependents tend to be prevention focused. Thus, it may be that priming self-construal also primes regulatory focus. If so, independents may be drawn to impulse items such as alcohol because they seek pleasure, whereas interdependents shy away from alcohol because they seek to avoid pain (Aaker and Lee 2001) and the presence of peers may heighten this effect. Although this explanation can account for the effects of studies 1a, 1b, and 2, it has difficulty explaining the effects of self-regulatory depletion in study 3.

One may argue that beer consumption in and of itself may not hold much face validity as a measure of impulsive consumption. We acknowledge this, but also note that self-construal influenced various measures of problem alcohol consumption (study 1b) and immediate desire to consume beer (studies 2 and 3). In addition, in other research we have found the same pattern of effects of self-construal and peer presence on the desire to consume a variety of “vice” products (Werthenbroch 1998) such as ice cream and potato chips (Zhang and Shrum 2008).

The research we presented has implications for persuasion that might be a useful focus of future research. For example, because an independent self-construal is associated with more positive attitudes toward the consumption of impulse-related products than is an interdependent self-construal, advertising that induces an independent self-construal may be more effective for impulse products than advertising that does not. Conversely, because an interdependent self-construal is associated with less positive attitudes toward impulse-related products, advertising that is aimed at decreasing impulse-related or vice-related product consumption (e.g., a public service announcement to curtail teen drinking) may be more effective when the advertisement induces an interdependent self-construal than when it does not. Given that previous research has shown that ads themselves can indeed influence self-construal (Hamilton and Biehal 2005), such a strategy seems plausible.

Our results have implications for understanding the mechanisms underlying the effect of self-construal on information

processing. Self-construal has attracted attention from consumer researchers and social psychologists, who have investigated its effects on attribution (Hong et al. 2000), attitudes (Agrawal and Maheswaran 2005), and risk preference (Mandel 2003), and different mediators have been identified. For example, Mandel found that the size of the social network mediates the effect of primed self-construal on risk preference in the context of social decision making. Agrawal and Maheswaran provided evidence that thoughts related to chronically accessible selves are responsible for the effect of self-construal on brand evaluations. Zhang, Feick, and Price (2006) found that a confrontation versus compromise style of conflict resolution is responsible for the effect of self-construal on aesthetic shape preferences. In the context of beer consumption, we found that the effect of self-construal is operating through consumption impulsivity. These results suggest that the processes underlying self-construal are contextually dependent on the task involved. Future research should specify the conditions under which different mediators might be responsible for the effect of self-construal on information processing.

Although our research indicates that independents tend to display more impulsive consumption tendencies than do interdependents, it does not suggest that all independents are impulsive and all interdependents are not. Many people within predominantly individualistic cultures are relatively good at resisting various temptations (what we and others have referred to as prudents), and even those who are not as good at resisting (impulsives) are still often successful. Likewise, there are examples of extremely impulsive behaviors by those in predominantly collectivistic cultures (e.g., binge drinking in Japan). Our research also indicates that peer presence enhances impulsive consumption tendencies for independents but depresses those tendencies for interdependents. However, the exact nature of that influence, and the exact type of peer, are not completely clear. Some research suggests that certain types of peers (e.g., close vs. distant friends, friends vs. other companions) increase attitudes and behaviors associated with impulsive consumption to a greater degree than other types of peers (de Castro 1994; Luo 2005). Moreover, even in more interdependent societies, there may be situations in which peer presence increases impulsive consumption behaviors through positive signaling, particularly once the behavior has started (e.g., the binge drinking example just mentioned). Research that more precisely specifies the situations that moderate the peer-presence effects would be useful. Such research, building on the research we have reported, may be helpful for understanding the situational factors that reduce the motivation or ability to suppress impulsive consumption tendencies and thus may be useful in fostering intervention methods to reduce impulsive consumption.

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