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Individual differences in situation awareness: Validation of the Situationism Scale

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Abstract

This paper concerns the construct of *lay situationism*—an individual's belief in the importance of a behavior's context. Study 1 identified a 13-item Situationism Scale, which demonstrated good reliability and validity. In particular, higher situationism was associated with greater situation-control (strategies to manipulate the environment in order to avoid temptation). Subsequent laboratory studies indicated that people higher on the situationism subscales used greater situation-control by sitting farther from junk food (Study 2) and choosing to drink non-alcoholic beverages before a cognitive task (Study 3). Overall, findings provide preliminary support for the psychometric validity and predictive utility of the Situationism Scale and offer this individual difference construct as a means to expand self-regulation theory.

Keywords

Self-regulation; self-control; scale validation; alcohol use; eating behavior

The human capacity to oppose temptation has become a topic of growing interest in psychology. Part of this interest may be due to the recognition that many of our societal health problems are rooted in "problems of temptation," whereby individuals engage in pleasurable but unhealthy behaviors, despite knowing the risks. For example, although excessive alcohol consumption can lead to many adverse outcomes for young adults, fourty percent of college students report binge drinking (SAMHSA, 2013). Likewise, being overweight increases the risk for many serious health conditions, yet obesity rates are reaching epidemic proportions in developed countries (Branca, Nikogosian, & Lobstein, 2007).

Popular efforts to improve health behavior clearly appreciate the utility of controlling the environment to circumvent temptation: Alcoholics Anonymous advises members to avoid bars and to not keep liquor in the house; Diet programs recommend avoiding fast-food

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restaurants and not keep junk food at home. This lay appreciation for situation-control (manipulating the context to avoid temptation) merits more research in psychology, which has greatly focused on behavior-control (battling temptation in the heat of the moment). Therefore, the present paper is aimed at a construct that could influence the utilization of situation-control. This construct is called *situationism* and it refers to an individual's belief in the power of situational influence. The goals of our projects were to (1) establish a psychometrically valid measure of *situationism* and (2) test the utility of situationism for predicting the use of situation-control strategies.

Theoretical Foundations for this Effort

Self-regulation theory

The term *self-regulation* refers to the exertion of control over oneself in order to inhibit the way one would otherwise think, feel, or behave. The majority of self-regulation research has focused on behavior-control (Muraven, Collins, & Nienhaus, 2002; Vohs & Heatherton, 2000; Ward & Mann, 2000). Consequently, in a typical laboratory paradigm, the experimenter has full control over the environment; for instance, participants might be seated next to a plate of cookies, and the experimenter will assess how well the participants can regulate their eating behavior (Baumeister, DeWall, Ciarocco, & Twenge, 2005). The overwhelming evidence from such investigations indicates that people's power to exert behavior-control is limited, and can be easily depleted (Muraven & Baumeister, 2000; Schmeichel & Baumeister, 2004). Thus, in the heat of the moment, the human ability to sustain behavior-control is often inadequate, and the result is a self-regulation failure (Baumeister & Heatherton, 1996).

Despite the generally limited ability of humans to sustain behavior-control, there are nevertheless individual differences. Recently, researchers have made strides in integrating the literatures of self-regulation with adult personality models (Hoyle, 2010). Several measures have been developed to assess such differences in self-regulatory "strength," and results tend to suggest that greater behavior-control is associated with more optimal outcomes for adults (Tangney, Baumeister, & Boone, 2004), as well as children (Gibbons et al., 2012; Mischel, Shoda, & Rodriguez, 1989). Various methods have also been proposed to improve performance in the face of temptation (Oaten & Cheng, 2006; Gollwitzer, 1999). Such methods, although effective, appear to be limited to a certain range, beyond which behavior-control can no longer be improved. In fact, self-control eating interventions have shown such small and transient success that some researchers have declared them inadequate for combating the massive obesity rates that are rising in developed countries (Lowe, 2003; Wadden, Brownell, & Foster, 2002).

Limitations to the current self-regulation literature—As already described, the typical self-regulation experiment places participants in a situation where the extent of temptation has been very carefully arranged. This type of paradigm creates a well-controlled but somewhat contrived scenario, and it is questionable how well it reflects what occurs in the real world (Tomiyama, Moskovich, Haltom, Ju & Mann, 2009). In particular, the experiments do not account for the fact that people often have some degree of situation-control. For instance, the dieter can often choose to not sit in front of the cookie tray, and the

alcoholic can decide to not enter a bar. Although numerous researchers have touched on the topic (as described next), no research has *directly* examined these types of preventive, situation-based strategies by which people structure the environment to avoid potential temptations.

Work involving situation-control strategies—Despite the lack of direct focus on situationism and situation-control, researchers have over the decades incorporated situation-based strategies into their paradigms. For instance, with its emphasis on external stimuli that elicit desired responses, behaviorism's perspective is very consistent with the notion of situation-control and has influenced approaches such as externality theory (Stuart, 1967), and behavior modification (e.g., Wadden et al., 2007; Fromme, Marlatt, Baer, & Kivlahan, 1994). Other work has discussed situation-control type behaviors in the context of self-regulation strategies (Pintrich, 2000; Fishbach & Trope, 2005; Hofmann & Kotabe, 2012; Wertenbroch, 1998; Zimmerman, 1989). Within health psychology, research has either not assessed situation-control strategies, or has combined it in scales with other types of strategies (e.g., Glassman, Werch, & Jobli, 2007; Kennett, Morris, & Bangs, 2006; Klesges et al., 1987; see Sugarman & Carey, 2007, for a noteworthy exception); however, health psychology theories have long recognized the importance of perceived environmental influence (Ajzen, 1991; Bandura, 1978; Gollwitzer, 1999). Overall, these various lines of research support the start of investigations focusing on situation-control and the cognitive processes that predict it. Thus, we turn to an individual difference construct (situationism) that might predict situation-control strategies.

Situationism

Emerging out of the attribution literature, the concept of *lay situationism* refers to the belief in the importance of a behavior's context (Choi, Nisbett, & Norenzayan, 1999). Lay situationism can be contrasted with lay dispositionism (Ross & Nisbett, 1991), the belief that behavior results from the internal attributes of an individual. Both terms were originally developed to describe how people explain (attribute) the behaviors of others in terms of internal and external factors. Cross-cultural research indicates that while most people demonstrate rather strong dispositionism, there are differences in the extent to which individuals make situationism-based judgments and decisions (Choi et al., 1999). More specifically, Asian cultures appear to have stronger situationism than Westerners: Asian participants are often more likely than Westerners to explain other people's behavior in terms of contextual influences (Miller, 1984), especially when these influences are made salient (Choi et al., 1999).

Although most work on situationism has focused on cross-cultural differences, this does not preclude the possibility of there being a fair amount of variation within Western culture (see McCrae, 2001; Unger et al. 2002). Indeed, findings from Norenzayan and colleagues (2002) would suggest this. These researchers asked participants to read an argument espousing a situational view of behavior, and to report how much they agreed with it. Not only was the mean response for Americans above the midpoint for agreeing with the statement, but standard deviations were above 1.6 on a 9-point scale. Thus, despite a mean cross-cultural difference, many of the Americans agreed strongly with the situational view, and there was a

good deal of variation within the American sample. Of note, apart from this one study, researchers have never attempted to measure individual differences in situationism directly. Rather, situationism has been regarded as part of a cross-cultural framework, and people's perceptions and attributions have been interpreted in terms of this framework.

Likewise, no investigations have sought to scrutinize situationism in terms of its underlying components. Nevertheless, a high degree of situationism appears to require several elements. Among these elements is an awareness, or consciousness of the surrounding environment, and an acknowledgement of, or perceived susceptibility to the environment's influence. Such subcomponents should have different predictive abilities, depending on the context of the self-regulatory event. Thus, any measure of situationism would be expected to have two or more subscales, with distinct predictive properties.

Related constructs—It is important to distinguish situationism from related but conceptually distinct constructs. For example, locus of control (LOC; Rotter, 1966) concerns the extent to which individuals believe they can control the events in their lives. People with a strong *internal* LOC believe that events are primarily contingent on their own behaviors. In contrast, people with a strong *external* LOC believe that events are due to chance, fate, or powerful others. Thus, LOC involves the perceived relation between one's own behavior and the subsequent outcomes, whereas situationism involves the perceived relation between one's *environment* and the subsequent outcomes. The constructs are related but distinct in terms of their focus, and so one might expect modest associations between them.

Does higher situationism predict more situation-control strategies?

Research on lay situationism has hitherto centered on attributions about others. However, it seems very likely that situationism also influences the judgments and decisions that people make regarding their own behavior. Specifically, it seems likely that people high on situationism will more frequently use situation-control strategies, in order to circumvent temptations. This supposition is based on other work indicating that when lay theories are frequently activated, they become chronically accessible, resulting in greater attention to theory-relevant constructs (Higgins, 1996; Hong, Levy, & Chiu, 2001). Thus, if people are high on situationism, they should be more attuned to situational cues, including those that pose a threat to self-regulation.

Identifying "self-regulators"

Of course, in order for a situationism→situation-control relation to occur, individuals must be making an attempt to self-regulate. If people are not tempted, then enacting situation-control will be unnecessary. Similarly, if people are content with giving into temptation, then situation-control strategies will not be called upon. Therefore, the situationism→situation-control relation should only occur if two criteria are met: (1) a person is tempted to act in a certain way, and (2) the person wishes, or is motivated, to avoid acting in that way.

Individual differences can, however, complicate the matter of identifying when self-regulation should occur: Not everyone is tempted by chocolate, internet videos, or parties;

and not everyone has the goal to be thin, get good grades, or stay sober. There are multiple ways that researchers attempt to address this issue, all with the purpose of examining only "self-regulators": many only recruit or only analyze data from selected samples, such as restrained eaters for dieting studies (Heatherton & Wagner, 2011); others contrive paradigms meant to enhance participant motivation (Muraven et al., 2002); still others experimentally manipulate motivation in order to make its effects more apparent (Klein & Hodges, 2001; Muraven, Rosman, & Gangé, 2007). Several of these approaches were utilized in the present research.

Overview

The preceding review has drawn from psychological literatures on self-regulation, health, development, and cross-cultural studies, in order to propose a new avenue for research. Specifically, there appears to be a trait (situationism) and a subset of behaviors (situation-control strategies) that deserve special attention. Figure 1 provides a conceptual framework of how these concepts might fit into existing self-regulation theory. Conceptually, situationism concerning one's own behavior should be negatively related to self-control and should have a positive influence on situation-control. This paper includes three studies that are based on these theorized relations.

The Current Studies

The goal of the current project was to establish a new scale for measuring situationism, by demonstrating (a) its psychometric validity and (b) its predictive utility. A series of three studies approached these objectives by examining two important domains of self-regulation research: alcohol consumption and dieting. In Study 1, scale reliability and validity were ascertained with psychometric analyses conducted on two large samples drawn from different populations. The next two studies occurred in controlled laboratory settings and focused on the subscales; they tested whether people who were higher on the situationism subscales showed greater situation-control when asked to resist snacking on junk food (Study 2) and when asked to choose between alcoholic and non-alcoholic beverages (Study 3).

Study 1: Scale Validation

Establishing a scale that captures the construct of *situationism* necessitates a demonstration of its psychometric validity. Study 1 set about this objective using two samples: a large and relatively homogenous sample (college sophomores) and a more heterogeneous online sample, to examine responses to a set of situationism items.[1] Scale reliability and factor analyses were used to distinguish items that meaningfully cohered and those that did not.

Methods

Scale Development—The process of creating a Situationism Scale used a standard sequence (DeVellis, 1991). To begin, the first author generated a list of potential items that

[1]There were several advantages to using two samples, including being able to conduct exploratory factor analyses with one group and confirmatory factor analysis on a second, "holdout" group.

went through several rounds of heavy editing by the other authors and additional colleagues. We created these items to reflect several potential subcomponents of situationism (including attention and susceptibility, as described in the introduction). We also wrote and edited these items so that their connotations and denotations would be comparable to people of different ages and cultural backgrounds. This initial effort produced 22 items.

Participants and Recruitment

Student sample: The majority of Study 1 analyses were conducted using data from undergraduate students (N = 258). These students were college sophomores who were recruited through email to complete an online survey. The sample was 63% female, 64% White, 20% Asian, 3% Black, 13% other race/ethnicity, and the M_{age} = 19.78 (*SD* = .67, range: 18–24). For participating, all students were given the chance of winning movie theater gift certificates.

Amazon Mechanical Turk (MT) sample: Confirmatory factor analysis (CFA) and test-retest reliability analysis were conducted using data collected via MT (a web service that allows researchers to post paid tasks online to a national sample of internet users; N = 289). MT provides access to a broadly-diverse sample of people, who range in age, ethnicity, and socioeconomic status. For this sample, 61% were females, M_{age} = 37 (*SD* = 12, range: 18–79), and 52% had completed a bachelor's degree (ethnicity was not assessed). MT users were paid $1 for completing the first survey, and $2 for completing a follow-up survey.

Design and Procedures—For the Student sample, students completed an online survey that assessed: situationism; self-control; past drinking and dieting behavior; behavior-based and situation-based strategies to control drinking and unhealthy eating; LOC; and demographics.

Study procedures were very similar for the MT sample. Participants first responded to demographic questions, followed by situationism items. Subsequent questions then pertained to a separate, unrelated study on risk behaviors. In order to measure test-retest reliability, participants were contacted again, approximately three weeks later, and asked to complete a survey of identical format (assessing demographics, situationism, and items for a separate study).

Measures

Situationism (Student and MT samples): The following results section describes at length the psychometric properties of the 22 situationism items.

Self-control (Student sample): We assessed self-control with the Brief Self-Control Scale (Tangney et al., 2004), a thirteen-item scale that includes items such as "I am good at resisting temptation (1 = *not like me at all*, 5 = *very much like me*). Scale reliability for our sample was good (α = .84).

Past Behavior (Student sample): To identify self-regulators, we asked students several Likert-scale questions about drinking and unhealthy eating. These questions were kept as

single items, and included how much the students enjoy the behaviors, how often they try to limit the behaviors, and dieting (the extent to which they were trying to lose, maintain, or gain weight).

Strategies (Student sample): Strategy items were adapted from previous literature (e.g., Glassman et al., 2007; Kennett et al., 2006; Martens et al., 2005; Sugarman & Carey, 2007), and included behaviors such as avoiding friends who drink heavily, and not keeping certain foods in your house/dorm. For both the alcohol and eating lists, students were asked to think about the times they try to control their alcohol consumption [eating], and report how often they relied on each strategy (1 = *never*, 5 = *always*). We aggregated these items to create four scales: situation-control strategies to regulate drinking (4 items, $\alpha = .77$) and eating (5 items, $\alpha = .70$); and behavior-control strategies to regulate drinking (5 items, $\alpha = .81$) and eating (5 items, $\alpha = .59$).

Locus of Control (Student Sample): We used an abbreviated, seventeen-item version of Levenson's (1973) Multidimensional Locus of Control Scale, which assesses perceived control due to chance, powerful others, and internal factors. We aggregated items for each of the three subscales (internal LOC, $\alpha = .68$; powerful others LOC, $\alpha = .55$; chance LOC, $\alpha = .54$).

Demographics (Student and MT samples): For the Student sample, students were asked to report their age, gender, year in school, and ethnicity. Since previous cross-cultural literature suggests that White individuals may have lower situationism (e.g., Choi et al, 1999; Norenzayan et al., 2002), ethnicity was dichotomized into White (64%) vs. non-White (36%). For the MT sample, only age and gender were assessed.

Analysis—Analyses began with determining the scale's factor structure (described in detail below), followed by tests for reliability and validity (including the association between situationism and: self-control, the LOC scales, and situation-control strategies). Drinking self-regulators were defined as people who (1) reported both enjoying alcohol and at least sometimes having enough to get drunk, and (2) reported at least sometimes trying to limit, or restrict, their drinking. Eating self-regulators were defined as people who (1) reported that they often ate unhealthy food and (2) reported that they were not trying to gain a lot of weight and at least sometimes tried to limit, or restrict, their eating.

Results

Factor Structure

Exploratory analysis: Data from the Student sample were used for exploratory factor analysis. A scree test (Cattell, 1966), which functions well when strong common factors are present in the data (Fabrigar, Wegener, MacCallum & Strahan, 1999), indicated that a two-factor solution was optimal.[2] Therefore, a principal components analysis with varimax rotation was conducted to solve for two factors, and items that did not load at the .4 level or above on only one factor were discarded. As recommended by Comrey (1988), this procedure was iterated until the communalities stabilized, ultimately resulting in the removal of 9 items. The remaining 13 items constituted the final Situationism Scale. Within this

scale, the first subscale, comprising 8 items, was labeled “Susceptibility to the Environment” (eigenvalue = 3.9). The second subscale, comprising the other 5 items, was labeled “Attention to the Situation” (eigenvalue = 2.2). Together, the two factors accounted for 47% of the total variance. Table 1 shows the final scale items and loadings.

Confirmatory analysis: To test the fit of this two-factor solution on an independent sample, a CFA was conducted using data from the MT sample. This CFA used full information maximum likelihood (FIML) with Mplus 3.11 software (Muthén & Muthén, 2004). In order to reduce correlated error, the 13 situationism items were divided into parcels; three randomly-generated parcels were created with the eight susceptibility subscale scale items, and used as indicators of the latent construct, *Susceptibility to the Environment*; and three randomly-generated parcels were created with the five attention subscale items, and used as indicators of the latent construct *Attention to the Situation*. Results indicated that the two-factor solution had good fit: $\chi^2(8, N = 289) = 12.35$, $p = .14$; Tucker-Lewis Index (TLI) = .96; comparative fit index (CFI) = .98; root-mean-square error of approximation (RMSEA) = .04.

Reliability

Internal consistency: Cronbach’s alpha indicated high internal consistency of the Situationism Scale: for the Student sample, $\alpha = .78$; for the MT sample, both baseline and follow-up scales had $\alpha = .85$. Reliabilities of the two subscales (*susceptibility to the environment* and *attention to the situation*) were high in both the student and the MT samples (αs > .83 and .69, respectively). The two subscales correlated marginally with each other (r = .12, $p = .07$).

Temporal stability: Data from the MT sample were also used to assess the three-week test-retest reliability of the situationism scale. For the overall scale, $r = .76$ ($p < .001$; T1 $M = 4.52$, $SD = 0.90$; T2 $M = 4.53$, $SD = 0.88$). Reliability for the two subscales was also good (rs = .80 and .63, respectively; both ps < .001).

Construct Validity: Convergent & Discriminant Validity

Self-Control: The brief self-control scale was negatively correlated with situationism, at $r = -.43$ (95% CI −.54–−.31, $p < .001$; a full correlation matrix is available upon request from the authors). Thus, situationism appears to share a negative relation with self-control, although not to the extent that would suggest the constructs are the converse of one another.

LOC: As expected, the internal LOC scale had a weak, negative relation with situationism ($r = -.16$, 95% CI −.30–−.02, $p = .02$). In addition, powerful other’s LOC and chance LOC had positive relations ($r = .23$, 95% CI .10–.37, $p < .01$; $r = .23$, 95% CI .09–.36, $p < .01$, respectively).

[2]We also conducted a parallel analysis (Horn, 1965) as another method for investigating the number of underlying factors. Our simulated eigenvalues for the first five factors were: 1.56, 1.47, 1.39, 1.32, and 1.27, whereas the actual eigenvalues from analysis of actual data for all 22 items were: 4.83, 2.51, 2.01, 1.41, and 1.25. Although these results suggest a four-factor structure could be reasonable, further investigation revealed that the latter two factors comprised few items. Thus, these results were consistent with our selection of a two-factor solution.

Strategies: Among drinking self-regulators (n = 155), the correlation between situationism and drinking situation-control strategies was positive at $r = .18$ (95% CI .02–.28, $p = .03$). Among eating self-regulators (n = 134), the correlation between situationism and eating situation-control strategies was positive at $r = .20$ (95% CI .02–.35, $p = .03$). Situation-control strategies were not significantly related to self-control or the LOC scales.

Demographics: For the Student sample, situationism did not differ by gender, or between White vs. non-White ethnic groups (ps > .4), but it was negatively correlated with age ($r = -.16$, 95% CI −.29–−.03, $p = .02$). For the MT sample, situationism had a marginal positive relation with age at T1 ($p = .095$) and had a significant, positive relation at T2 ($r = .16$, 95% CI .04–.27, $p = .009$). Situationism was not related to gender or education in the MT sample at either wave.

Study 1 Discussion

The results of Study 1 provided evidence for the psychometric validity of the Situationism Scale. Specifically, this 13-item scale had a robust factor structure and there was good scale reliability, as demonstrated by a high degree of internal consistency and temporal stability. The results also provided some evidence of construct validity, as (1) situationism was related to self-control and the LOC scales, and (2) situationism (but not self-control or LOC) was related to situation-control strategies. In addition, the two subscales, *Susceptibility to the Environment* and *Attention to the Situation* made conceptual sense. Overall, the Situationism Scale appeared to be psychometrically sound, and it appeared to be assessing a unique factor that was not redundant with other measures. Therefore, having established the psychometric elements of the Situationism Scale, the next step was to test the predictive utility of the Situationism Scale and the unique predictive utilities of its two subscales. An additional purpose of the studies was to avoid the limitations of self-reports, and obtain more objective measures of situation-based strategies in controlled laboratory settings.

Study 2: Distancing from Temptation

The premise of Study 2 was similar to the classic self-control paradigm, where participants are asked to regulate their eating behavior in the presence of junk food. Here, however, people had the option of exerting some situation-control, in the form of sitting farther away from the food. Taking advantage of room arrangements requires a quick assessment and a keen awareness of a room's environment. Therefore, it was hypothesized that the subscale *Attention to the Situation* (attention), rather than the full Situationism Scale, would be particularly useful at predicting which individuals would sit farther away from food items (i.e., show greater situation-control).

Methods

Participants and Recruitment—Eighty college students were recruited for a study on "personality and cognitive performance" and received class credit for participating. The data of two students were excluded because they reported suspicion about the study hypothesis. In addition, the data of fifteen students were excluded because they had eaten within 20 minutes of the study.[3] Therefore, a total of 63 students was available for analysis. This

sample was 65% female, 68% White, 19% Asian, 8% Black, 5% other race/ethnicity, and M_{age} =18.84 (*SD* = 1.84, range: 18–24).

Design and Procedure

Baseline: Students who signed up for the study were contacted and asked to complete a brief online survey at least one day before the experiment. This baseline included: the 13-item Situationism Scale; two measures of eating behavior (frequency of eating unhealthy foods "like sweets or junk food;" frequency of controlling one's eating "i.e., changing your eating in order to lose weight or be healthier;" 1 = *never*, 5 = *always*); and the Brief Self-Control Scale. Several filler scales were also included, to mask the purpose of the study.

Experiment: The experimental session began in a main office. After participants signed the consent form, the experimenter provided a study overview, which embellished the cover-story. Specifically, the experimenter explained that the session consisted of three parts, and that the participant had been randomly assigned to an order for completing them. In reality, all participants started with the same spatial-reasoning task.

The testing room for the spatial-reasoning tasks contained a long table. On the table were three large, clear glass bowls, each brimming with one type of food: chips, and candy, or individually-wrapped chocolates. These bowls were placed at the end of the table that was closest to the door. While bringing participants into the room, the experimenter would gesture to these bowls, mentioning that there was some food left out from another study and saying: "so obviously, please don't eat any of it." Next, the experimenter would glance around the testing room, remark that there wasn't a chair, and ask the participant to bring in a chair from the hallway. The participant was thus free to place the chair as close to or as far from the food as desired. Due to the placement of the food near the doorway, the participant would have to walk a greater distance into the room in order to sit farther away.

Once participants were seated, the experimenter provided them with a challenging puzzle task. Students were given seven minutes to complete as many puzzles as possible, before being brought into a second testing room to complete an additional task (not reported here). Finally, the experimenter probed for suspicion and asked several debriefing questions.

Experimental Session Measures

Distance: When setting up the puzzle materials, the experimenter surreptitiously marked the placement of participants at the table. The distance between this marker and the bowls of food was measured in centimeters after the participant had left the room. Distance was log-transformed, to minimize the effect of extreme scores.

Demographics: Following their final task, participants were asked to report their gender, age, year in college, and ethnicity.

[3]Recruitment did not mention any requirements about fasting before the study, because of concern that it would generate suspicion. Nevertheless, previous studies have made certain that at least twenty minutes separated the time when participants last ate from the time when participants faced their tempting food (e.g., Baumeister, Bratslavksy, Muraven, & Tice, 1998; Baumeister, DeWall, Ciarocco, & Twenge, 2005).

Analyses—For the regressions that follow, all continuous independent and dependent variables were standardized (z-scored). Due to their likely relation to eating-regulation, self-control and past eating control were included as factors. Eating self-regulators were defined as people who reported that they (1) at least sometimes eat unhealthy food and (2) at any time try to control their eating.

Results

None of the students reported eating any of the food during the experiment, and this was verified by a balance scale (sensitive to 0.1g). In addition, when asked during the debriefing, no students reported allergies or health reasons that would have prevented them from eating the food. Consistent with the results of Study 1, average scores on the Situationism Scale were somewhat above the scale's midpoint (M = 4.66, SD = 0.69) and there was good internal reliability (α = .75). The two subscales were not significantly correlated (r = .17, p = .19). Unlike the previous studies, the zero-order correlation between situationism and self-control did not reach statistical significance; however, the relation was marginal in the expected negative direction (r = −.21, p = .099). Among the eating self-regulators (n = 55; see analysis section), seating choices ranged greatly, from 119.4cm to 241.3cm from the food bowls (M = 174.8, SD = 25.2). Zero-order correlations indicated that distance was not significantly related to age, gender, White vs. non-White ethnicity, or year in college (ps > .23).

Does Situationism Predict Situation-Control?—To test whether the attention subscale predicted greater situation-control (i.e., greater distance between the food and the chair), a regression predicting distance was conducted. Step 1 entered past behavior and self-control; Step 2 entered the attention subscale. Self-control was not a significant predictor (p > .45); however, past dieting behavior was related to a shorter distance from the food (β = −.30, 95% CI −.80–−.003, p = .049). As expected, the attention subscale was a significant positive predictor of distance, at β = .32 (95% CI .01–.62, p = .045). Thus, students with higher scores for the subscale *Attention to the Situation* were placing their chairs farther away from the junk food.

Follow-up analyses indicated that the effect of the attention subscale was stronger when self-control was removed from the model (β = .35, 95% CI .06–.63, p = .02). When the full Situationism Scale was used instead of the attention subscale, the effect was marginal (β = .27, p = .07); use of the susceptibility subscale did not produce a significant effect (p > .54).

Study 2 Discussion

Study 2 used a laboratory paradigm to measure situation-control in a controlled environment. Specifically, students were required to regulate their eating and situation-control was operationalized as distance seated from the food. Results showed that, after controlling for past eating behavior and self-control, higher scores on the subscale *Attention to the Situation* predicted greater situation-control. Study 3 was designed to complement Study 2, testing the utility of the other situationism subscale, *Susceptibility to the Environment*, for predicting alcohol use, and, additionally, testing the moderating influence of motivation.

Study 3: Manipulating Motivation to Control Drinking

A second laboratory study, Study 3 aimed to provide supportive evidence for the second situationism subscale. The cover story to this experiment (explained in detail in the methods section) was that researchers were interested in "the effects of alcohol on cognitive performance" and that, for ethical reasons, they could not assign people to a drinking-alcohol condition. Working from this premise, the study prompted participants to choose which condition they wanted to be in (alcohol vs. non-alcohol). Thus, we created an opportunity to avoid drinking alcohol before any beverages became present—and it was people's beverage selection that served as the primary outcome of interest for this study.

In addition, this study utilized another method for examining only self-regulators (as discussed in the introduction): manipulating motivation to self-regulate. Specifically, the study paradigm was designed such that students in a high-motivation condition would have a heightened desire to regulate their alcohol consumption under circumstances that were otherwise conducive to drinking. Recognizing the threat of the alcoholic-beverage selection required an acknowledgement of the potential to consume more alcohol than intended. Therefore, the main hypothesis was that in the high-motivation condition, people higher on the situationism subscale *Susceptibility to the Environment* (susceptibility) would demonstrate greater situation-control, by selecting the non-alcohol option.

Methods

Participants and Recruitment—Participants were undergraduates (N = 45) who were aged 21 years or older (the age restriction was to prevent the legality of drinking from becoming an issue during the experiment). Students received either $5 or class credit for participating. This sample was 60% female, 76% White, 13% Asian, 4% Black, 7% other race/ethnicity, and M_{age} = 21.7 (*SD* = 1.38, range: 21–29).

Design and Procedures

Baseline: Students who signed up for the study were contacted and asked to complete a brief online survey at least one day before the experiment. This baseline survey included the Situationism Scale, three measures of drinking behavior (frequency of having three or more drinks at one time; frequency of controlling one's drinking "e.g., not drinking at all, stopping after two drinks, etc.;" for both, 1 = *never*, 5 = *several times per week*; and enjoyment of drinking, 1 = *dislike very much*, 5 = *like very much*), the Brief Self-Control Scale, several filler items, and demographics (age, gender, and ethnicity).

Experiment: We ran students individually during the late afternoons and early evenings of days that tended to have parties. Once participants signed the consent form, the experimenter embellished the cover-story. Specifically, we told participants that: the study concerned the influence of alcohol on cognitive performance, such as memory and reaction times; they would be brought to individual testing areas to complete various cognitive tasks; all students would have the option of being in either an alcoholic or a nonalcoholic beverages condition ("for ethical reasons, this is a self-selection study"); and the study would last about 45 minutes, with the hardest memory and reaction-time questions being at the end. The

experimenter emphasized that regardless of condition, all students would drink at least one full beverage (alcoholic or nonalcoholic), and they would have the option of drinking more. In reality, no alcohol was ever made available, and the study only lasted approximately 15 minutes.

In order to manipulate students' motivation to control their drinking behavior, there were two types of incentive instructions. In the *High-Motivation Condition*, participants were told that the six students with the highest scores on the memory and reaction time questions would receive gift-certificate prizes. In the *Low-Motivation Condition*, participants were told that six students would be randomly selected to receive gift-certificate prizes. Thus, only participants in the high-motivation condition should have believed that their reception of a prize was contingent on their performance (this method of motivating participants has been successful in past research; Klein & Hodges, 2001; Muraven et al., 2007). Following the instructions, students were seated at a computer, and asked to make their beverage selections (the primary outcome of interest). They then completed a few more computer tasks (not reported here), were told that the study was over, were probed for suspicion, and debriefed.

Experimental Session Measures

Beverage Selection: For the *alcohol decision*, participants indicated on the computer which drinking condition they would prefer to be in: the Non-alcohol condition (having a selection of water, juices and sodas) or the Alcohol condition (having a selection of alcoholic drinks, including beer, wine, and spirits). Participants were then asked to indicate whether they had any health or medical issues that would prevent them from being in the alcohol condition (*yes*, or *no*). For an additional question, the *heavy alcohol decision*, participants also indicated (*yes*, or *no)* whether they would be willing to be in a heavy drinking condition, where they could drink beverages of higher alcoholic content (greater than 30-proof) with mixers available. Responses to the alcohol decision and the heavy alcohol decision were combined and coded such that students were categorized as either *choosers* (people who selected alcohol for at least one of the questions) or *avoiders* (people who chose the no-alcohol condition for both questions).

Analyses—For the logistic regression, all continuous independent variables were standardized (z-scored). Due to their likely relation to alcohol-regulation behavior (strategies), self-control, enjoyment of drinking, and age were included as factors in the regression. Drinking self-regulators were defined as people who (1) reported both enjoying alcohol and at least sometimes drinking heavily, and (2) reported at least sometimes trying to limit, or restrict, their drinking. Data were excluded from self-regulators if they reported a health or medical reason for not being able to drink (n = 1) or if they reported suspicion about the study hypothesis (n = 3).

Results

Scores on the Situationism Scale were consistent with the preceding studies ($M = 4.78$, $SD = 0.76$) and there was good internal reliability ($\alpha = .79$). The two subscales were not significantly correlated ($r = .18$, $p = .25$). The zero-order correlation between situationism and self-control was significant in the expected negative direction ($r = -.30$, $p = .045$).

Among the drinking self-regulators (n = 27), 78% chose to drink alcohol during the experiment, and 22% chose the non-alcohol options. There was no difference in avoidance across gender, age, or White vs. non-White ethnicity. In addition, motivation condition did not differ across demographics, self-control, or the susceptibility subscale.

Beverage selection: Choosing or avoiding alcohol—A logistic regression tested whether the susceptibility subscale and the motivation manipulation predicted beverage selection. Step 1 entered self-control, enjoyment of drinking, and age. Step 2 entered the susceptibility subscale and motivation condition. Finally, Step 3 entered the Susceptibility × Motivation interaction term. The model correctly classified 88.5% of the cases at the final step (by group, 95% of those choosing alcohol and 67% choosing no alcohol were correctly classified). There was only one significant predictor: the Susceptibility × Motivation interaction (OR, 0.02, 95% CI 0.00 – 0.92, p = .045). Although simple slopes could not be computed with the covariates (due to the reduced sample size), testing with just the susceptibility subscale showed that the effect of the subscale on beverage selection had a positive, but non-significant relation among students in the high-motivation condition (B = 2.09; p =.18), and negative, non-significant relation among those in the low-motivation condition (B = −1.28, p =.15),

As in Study 2, follow-up analyses indicated that the effect of the subscale was stronger when self-control was removed from the model (OR, 0.01, p = .036). When the full Situationism Scale was used instead of the susceptibility subscale, the effect was marginal (OR, 0.6, p = .07); use of the attention subscale did not produce a significant effect (p > .26).

Study 3 Discussion

Similar in concept to Study 2, Study 3 objectively measured situation-control in a laboratory environment. Specifically, students were told that the experiment was about the effects of alcohol on cognitive performance, and they were asked to choose between drinking alcoholic or non-alcoholic beverages. A logistic regression indicated that the situationism subscale *Susceptibility to the Situation* interacted with the motivation condition: when motivation to control drinking behavior was experimentally manipulated to be high (vs. low), higher scores on the subscale predicted greater situation-control (i.e., a greater likelihood of choosing the non-alcoholic beverage condition). In other words, consistent with predictions, when there was a need to regulate alcohol consumption (the high-motivation condition), students who were more readily able to appreciate the potential for over-drinking were more likely to avoid the alcoholic-beverage condition.

General Discussion

This paper has presented three studies that examined the psychometric properties and the validity of the Situationism Scale. Although strong theoretical and empirical efforts laid the groundwork for this investigation, these were the first studies to measure and investigate situationism in relation to situation-based self-regulation strategies. Overall, these studies were aimed at expanding self-regulation theory by establishing situationism as a valid, dispositional construct with important predictive utility.

Study 1 identified the 13-item Situationism Scale and showed that it had good reliability and construct validity. In addition, factor analyses indicated that the Situationism Scale consisted of two subscales—*Susceptibility to the Environment* and *Attention to the Situation*. It is also worth noting that situationism had a negative relation with self-control, and that whereas situationism was associated with situation-control strategies, self-control was not. Thus, situationism appeared to be a unique factor concerning an individual's belief in the importance of a behavior's context. Studies 2 and 3 occurred in controlled laboratory environments. In Study 2, students were asked not to eat some tempting-looking food (a rendering of the classic self-regulation paradigm) and situation-control was assessed in terms of distance students sat from the food. As expected, higher scores on the attention subscale predicted greater situation-control. In Study 3, a logistic regression indicated that in a condition of high (vs. low) motivation to regulate drinking, higher scores on the susceptibility subscale predicted a greater likelihood of using situation-control—defined as selecting to drink non-alcoholic, rather than alcoholic, beverages during an ostensible future task.

Implications

Although preliminary, findings from these studies suggest potential new avenues for intervention. The Situationism Scale could, for instance, help in identifying individuals at risk for self-regulation failures. In addition, if situationism and the use of situation-control strategies could be enhanced, it would reduce reliance on behavior-control strategies. This shift toward situation-control is in line with what Reyna and Farley (2006) have referred to as self-binding: making decisions in a "cold" state that reduce subsequent decision-making in a "hot" state. Such a preemptive means of dealing with temptation may have widespread utility, given the evidence for the pervasiveness of self-control failures. In addition, it is possible that situationism-based interventions would be particularly effective for individuals with low self-control or low working memory capacity (i.e., poor efficacy at using stored information to perform task-relevant operations; Hofmann, Schmeichel, Friese, & Baddeley, 2011, have related this to depletion and self-regulation failures). Nevertheless, research on situation-control is not intended to supplant or overshadow other health and self-regulation research, especially because temptations are at times unexpected or unavoidable. Rather, situation-control is meant to complement existing research, and be understood within the context of the many factors involved in self-regulatory successes.

Limitations and future directions

It is important that follow-up studies assess situationism in relation to additional, potentially associated scales that were unmeasured in the current project (e.g., perceived behavioral control, power of food, self-awareness, situational Q-sort). For instance, although we suspect that the emphasis of self-monitoring on social image renders it distinct from situationism, their relations should be examined in future work. Likewise, although study findings demonstrated a relation between situationism and situation-control behavior, this paper did not report how these constructs related to actual self-regulation success/failure. As several reported correlations were weak, the relations also merit replication. Replications that gather data using different techniques would also reduce mono-method bias. Overall, further work is necessary to more definitively ascertain how the relations between

situationism, the situationism subscales, self-control, situation-control, behavior-control, and self-regulation outcomes all transpire.

An additional limitation is that the majority of participants in these studies were college students at an elite university; it is unclear, therefore, whether the Situationism Scale is appropriate for all populations. Along similar lines, there were not enough Asian and Asian-American participants in the samples to conduct East-West comparisons. Thus, it is unknown whether previous work indicating that East Asians had stronger situationism than Westerners (e.g., Choi et al., 1999; Norenzayan et al., 2002) could be replicated using the Situationism Scale. The null effects of White vs. non-White differences in these studies is, consequently, inconclusive.

The Situationism Scale has only been examined with individuals aged 18 years or older—a time by which most people have had ample experience with regulating their own behaviors (Romer, Duckworth, Sznitman, & Park, 2010), and personality differences are highly consistent (Caspi, B. Roberts, & Shiner, 2005). An interesting direction for future research would be to ascertain how situationism develops and changes throughout childhood and adolescence, as well as adulthood. Further work may also investigate the domain specificity of the relation between situationism and situation-control (e.g., do people high in situationism enact situation-control for all types of behaviors, beyond eating and alcohol use?). In addition, although situationism and self-control demonstrated a negative correlation, it would be interesting to investigate those individuals who were high on both constructs (and the implications for self-regulation).

Summary and Conclusions

Overall, study findings support the theorized relations among situationism, its subcomponents (or subscales) and situation-control. Results demonstrated that the scale had a sound factor structure and good reliability, and that it displayed concurrent, discriminant, and predictive validity, under both self-report and laboratory conditions. As a dispositional construct, situationism (i.e., the extent that one believes in the importance of a behavior's context) appears to serve as a complement to self-control, influencing the use of situation-control strategies, just as self-control influences the use of behavior-control strategies. Thus, although preliminary, these studies provide initial evidence for the utility of the Situationism Scale.

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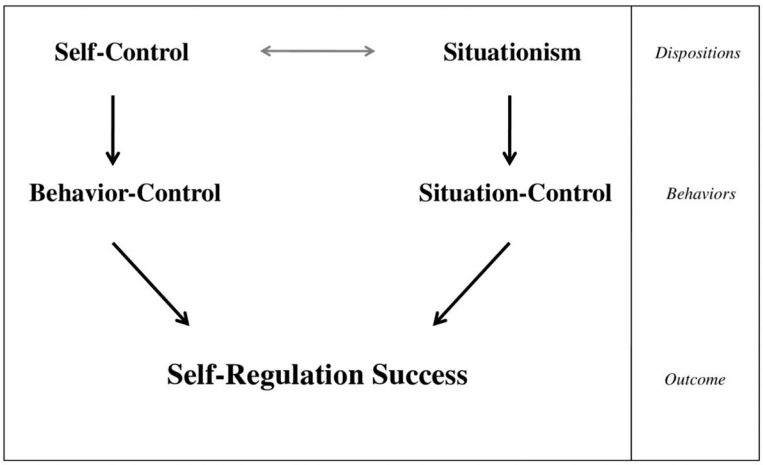

Figure 1.

Conceptual model of how situationism and self-control may influence self-regulation. Situationism—which shares a negative relation with self-control—is expected to positively influence situation-control strategies. In turn, situation-control strategies are expected to influence self-regulation outcomes.

Table 1

The Situationism Scale and Item Loadings for the Student sample (Study 1).

	Loading on the Situationism Scale	Subscale Item-Total Correlations (*r*)	
		Attention	Susceptibility
1. I pay attention to relationships between my environment and my behavior.	.69	.46	
2. When my self-control fails, it is partly due to my current surroundings.	.66		.55
3. I tend to be conscious of my surroundings.	.63	.39	
4. Certain locations can make self-control difficult for me.	.69		.57
5. I never really notice how places affect me. (R)	.75	.56	
6. My surrounding environment has no influence on my behavior. (R)	.65	.41	
7. Some circumstances make it difficult for me to resist conforming.	.56		.43
8. My good intentions can be defeated when a temptation is in front of me.	.73		.61
9. The places around me influence my behavior.	.72		.63
10. I take notice of how people influence me.	.61	.43	
11. How disciplined I behave has nothing to do with the temptations that are around me. (R)	.50		.36
12. Certain people can make self-control difficult for me.	.79		.68
13. Regardless of my personality, how I act is affected by the people around me.	.74		.61

Note: Loading = rotated factor loading on primary scale. *r* = corrected item-total correlation. Attention = The situationism subscale, *attention to the situation*. Susceptibility = The situationism subscale, *susceptibility to the environment*. (R) indicates reverse scoring.

Items not chosen for the final scale are available upon request from the first author.