It Was(n’t) Me: Exercising Restraint When Choices Appear Self-Diagnostic
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It Was(n’t) Me: Exercising Restraint When Choices Appear Self-Diagnostic

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This research tests the hypothesis that individuals exercise restraint for actions that reflect on their self-concept (i.e., self-diagnostic actions). Experiments 1 and 2 show an action framed as occurring at the beginning or end (vs. middle) of a constructed sequence is seen as more self-diagnostic. Accordingly, Experiment 3 finds more restraint in snack choices at the framed beginning or end (vs. middle). Furthermore, the degree of importance of a goal—which reflects its centrality to the self-concept—determines responses to self-diagnosticity cues such as framed positions. Specifically, participants committed to financial goals (Experiment 4) and health goals (Experiment 5) were more likely to make decisions consistent with these goals at the beginning or end, but indulged and splurged in the middle. Experiment 6 shows similar patterns for judgments of magazine subscriptions, but only when individuals are faced with a decision that poses a self-control conflict for them. These results highlight the role of the self in self-control by demonstrating that people exercise restraint when decision contexts seem more telling of the self.

Keywords: self-control, self-diagnosticity, self-concept, goal pursuit

Should I spend $699.99 on these designer boots or go for something less pricy? Should I snack on this deliciously sugary candy bar or on some fruits? On a daily basis, people who value their finances and their health encounter countless such self-control dilemmas posing a trade-off between their long-term goals (e.g., staying physically or financially healthy) and some form of instant gratification. We define self-control as the capacity to control impulses in order to resist a temptation (e.g., going on a shopping spree) and protect a valued goal (e.g., staying financially sound). Many times, these everyday temptations appear to have minimal negative consequences for the long run (Fishbach & Converse, 2010; Rachlin, 2000; Read, Loewenstein, & Kalyanaraman, 1999). The problem is that, in many developed and developing nations, people are continuously confronted with opportunities to indulge and splurge; and through repeated, often automatically triggered consumption, mundane temptations can become damaging both at the individual and collective levels (Hofmann, Baumeister, Förster, & Vohs, 2012; Papies, Stroebe, & Aarts, 2007). Worldwide rises in personal debt and obesity rates are only a few illustrations of the potentially devastating consequences of repeated self-control failures. The ability to delay gratification can vary from one individual to the next (Mischel, Shoda, & Rodriguez, 1989), but can also be influenced by situational factors.

Research shows cues of the potential impact of an action on a long-term goal increase the likelihood individuals will exercise self-control (Fishbach & Zhang, 2008; McFerran, Dahl, Fitzsimons, & Morales, 2010; Schmeichel & Vohs, 2009; Weber et al., 2007; Wilcox, Vallen, Block, & Fitzsimons, 2009). For example, people are more likely to exercise restraint when they think of a decision as part of a broader pattern of behavior rather than as an isolated choice. Indeed, when considering broader decision patterns, goal-inconsistent decisions become more problematic for long-term interests (Myrseth & Fishbach, 2009; Rachlin, 2000; Read, Loewenstein, & Kalyanaraman, 1999).

Beyond its long-term goal benefits, exercising self-control can be beneficial to the self-concept. Indeed, self-control may be driven not only by achievement but also by the potentially flattering identities that arise from resisting temptation and adhering to personal or societal higher-order pursuits (Markus & Nurius, 1986; Gollwitzer, Wicklund, & Hilton, 1982). Exercising self-control is often viewed as a gratifying sign of willpower, whereas succumbing to temptation can be a damaging signal of weakness (Prelec & Bodner, 2003). Deciding not to spend money on an extravagance will have goal consequences for how much money a person has in her bank account, as well as self-concept consequences for her perception of herself as “frugal” or “financially responsible.” Supporting the notion of the high signaling-value of self-control, Dhar and Wertenbroch (2012) showed people’s valuations of virtuous
options (e.g., healthy foods) are higher when choosing such options would require forgoing more attractive vice options (e.g., unhealthy foods). Thus, exercising self-control not only contributes to the advancement of a long-term goal (e.g., staying healthy), but also signals valued traits and identities linked to that goal (e.g., strong-willed, health-conscious).

The question we investigate in this article is whether cues that make a decision seem more representative of the self (i.e., self-diagnostic) will increase the likelihood that people will exercise self-control to maintain a positive image of the self. Although previous research has looked at how resisting temptation can boost the self-concept (Dhar & Wertenbroch, 2012; Prelec & Bodner, 2003), ours is the first empirical evidence that concerns about one’s self-concept promote restraint. We draw from previous research suggesting people are motivated to maintain a positive image of the self (Steele, 1988; Greenwald & Breckler, 1985), including verifying and enhancing their self-concept, and thus often make choices strategically to signal valued traits and identities to themselves (Bodner & Prelec, 1996; Quattrone & Tversky, 1984; Shafir & Tversky, 1992).

The Self in Self-Control

The self-concept is a collection of traits, identities, goals, and other units of self-knowledge (Bower & Gilligan, 1979; Linville, 1985; Markus & Wurf, 1987). Depending on contextual cues, particular units become active and this continually changing array of accessible self-knowledge constitutes the “working self-concept” (Markus & Nurius, 1986; Hodowetz & Agustsdottir, 1986; Schlenker, 1985). Judgments and behaviors can be the passive consequences of the working self-concept (Dijksterhuis & Van Knippenberg, 1998; Fazio, Effrein, & Falender, 1981), or can play the more strategic role of validating and signaling valued self-knowledge. In the present article, we focus on the process whereby an individual engages in an action at least in part to convey or confirm valued identities to the self. Though people care about how others perceive them, they are also motivated to present a positive image of themselves to themselves—whether or not others are watching (Hogan, Jones, & Cheek, 1985; Schlenker, 1985).

Because people strive to maintain a positive self-concept, we propose that any cue that one’s actions or judgments are representative of the self (i.e., self-diagnostic) will promote self-control. This proposition stems from the recognition that goals confer specific identities or units of self-knowledge (Markus & Nurius, 1986; Gollwitzer, Wicklund, & Hilton, 1982). Goal-consistent actions or judgments—such as resisting the temptation to eat an indulgent snack—should have a positive influence on the self-concept, whereas giving in to temptation (e.g., overspending) should have a negative influence on the self-concept.

Position and Framed Position Influence Action Diagnosticity

To manipulate the self-diagnosticity of actions, we draw from previous research connecting position in a goal sequence to adherence to standards. Specifically, Touré-Tillery and Fishbach (2012) showed people tend to adhere to ethical standards (e.g., behave honestly), religious traditions (e.g., follow religious rituals), and performance standards (e.g., work accurately) at the beginning and end of goal sequences (e.g., first and last trials), but slack in the middle (e.g., middle trials). The authors attribute these patterns of behavior to greater perceptions of diagnosticity at the beginning and end (vs. middle) stemming from the natural salience of these positions. Indeed, when presented with sequential stimuli, people tend to remember the first few stimuli (primacy effect) and last few stimuli (recency effect) better than those in the middle (see Greene, 1986; Murdock, 1960). Furthermore, beginning and end are transition or break points that capture attention—and are thus presumably more influential for inferences about people.

Moving beyond goal sequences and position in the context of actual sequential actions (e.g., 10 shape-cutting tasks; Touré-Tillery & Fishbach, 2012), we study the “framed” position of a single decision presented as occurring at the beginning or end (vs. middle) of a constructed or arbitrarily selected sequence. Many everyday goal-related decisions (e.g., choosing a snack, making a purchase, reading a magazine) are not part of a clearly defined, step-by-step sequence of actions, but people might conceive of them as belonging to constructed sequences with arbitrary beginnings, middles and ends. For example, a person might think of her lunch as occurring at the beginning of her afternoon, in the middle of her day, or at the end of her morning. Beginning or end (vs. middle) frames for such a one-time (vs. repeated) decision might not be associated with greater salience, since there is no clear series of decisions from which to stand out. Indeed, a single decision or choice might be equally salient whether it is framed as “first”, “middle,” or “last,” because it should be the sole focus of attention at that particular point in time—unless when it is one decision in a series of decisions. Thus, unlike with sequential goal-related actions (Touré-Tillery & Fishbach, 2012), the greater diagnosticity of beginning and end (vs. middle) positions in the context of framed positions might not result from salience.

We hypothesize, however, that the effect of position on perceptions of self-diagnosticity will operate in the context of framed positions in vaguer, constructed sequences. Specifically, framing an action as occurring at the beginning or end (vs. middle) of a constructed sequence (e.g., given time frame) will make this action appear more diagnostic for inferences about the self. This proposition is based on the notion that people might have formed an association between position—in particular beginning and end—and diagnosticity. Indeed, the notions of “making a good first impression” and “ending on a good note” are broadly learned and accepted, suggesting beginning and end are considered critical points on which future judgments and decisions might depend. Thus, thinking in terms of any type of (goal-irrelevant) sequence might render the beginning and end (vs. middle) of this sequence more critical for impression formation. For example, if a person focuses on a specific time frame in her life (e.g., her afternoon), the first or last (vs. middle) task of this particular time frame might appear more diagnostic for inferences about herself.

Self-Diagnosticity in the Pursuit of Personal Goals

Whereas Touré-Tillery and Fishbach (2012) showed the influence of position on adherence to social standards—that is, norms attributed to a social group (e.g., not cheating, not slacking on a work task, engaging in religious rituals), the present research goes beyond adherence to these types of standards and explores how
people exercise restraint and overcome temptation in the context of personal goals. There are similarities between following social standards and adhering to personal goals: both can be costly in terms of time, physical and psychological effort. However, there are important differences. Although most people know and often internalize social standards, some aspects of these standards remain external to the person (Wenzel, 2004). The conflict in adhering to social standards tends to be between the desires of the self (not expending too much effort; making easy money) and the expectations of others—that is, controlling agent (boss, society, etc.). Therefore, it is conceivable that people will take advantage of opportunities to strategically disobey social standards, when they can do so without damaging their self-concept or reputation (e.g., in the middle of sequences). By contrast, personal goals set by individuals for themselves (e.g., eating healthily, spending responsibly) should be fully internalized, and thus might be less prone to this type of strategic (non-) adherence. The pursuit of personal goals often requires resolving an internal conflict between the goal and a luring temptation (a “self-self” conflict instead of a “self-others” conflict). Indeed, one might argue that those for whom a goal is highly important would be motivated by their strong desire to reach their goal, rather than by their desire to maintain a positive self-concept—therefore they should adhere to the goal, whether their actions are diagnostic or not. However, we propose that behaviors related to personal goals will not be immune to the influence of self-diagnosticity cues.

Moderation by Goal Importance and Experienced Self-Control Conflict

The self-concept can be an important source of motivation. Indeed, goals correspond to specific identities or aspects of the self-concept (Markus & Wurf, 1987); and the importance of a goal reflects not only the strength of the desire to reach it, but also the centrality of its corresponding identity for the self-concept (Cantor, Markus, Niedenthal, & Nurius, 1986; Foote, 1951; Gollwitzer & Wicklund, 1985). A person who values the goal of “watching her spending” will care about the balance in her bank account as well as about maintaining an image of herself as “financially responsible.” For this person, decisions related to her financial goal will have a strong influence on her self-concept. Thus, we hypothesize that the subjective importance of a goal—which reflects its centrality for the self-concept—will moderate the proposed effects of self-diagnosticity on self-control. Specifically, people for whom a goal is important will be more likely to exercise self-control under conditions of high (vs. low) self-diagnosticity, that is at the framed beginning or end (vs. middle), because their self-concept is more sensitive to actions related to that goal. By contrast, the responses of people for whom a goal is less important will be less affected by self-diagnosticity cues, because actions related to that goal are less relevant to their self-concept.

One implication of this proposed moderation is that subjective goal importance is an insufficient determinant of goal adherence: people for whom a goal is important will not necessarily exercise restraint at all times, but they will do so when self-diagnosticity is high. This prediction is particularly important because it highlights the key role of the self-concept in self-control. Indeed, in a world where goal-impact considerations are the only drivers of self-control, we would expect people for whom a goal is more important to consistently exercise more restraint than those for whom the goal is less important. However, we predict that when self-concept concerns are low, people for whom the goal is important will deviate from this expectation and splurge or indulge as much as people for whom the goal is less important.

A second moderation is the experience of a self-control conflict. Only when a decision presents a self-control conflict should people respond to self-diagnosticity cues. By showing a moderation by subjective self-control conflict, we can further argue that our proposed patterns of result stem from private self-concept concerns rather than public self-presentation ones.

Overview of Research

Six experiments tested our hypotheses about the differential diagnosticity of framed positions and the effect of self-diagnosticity on self-control. We predict decisions framed as occurring at the beginning or end (vs. middle) of a constructed sequence will be seen as more diagnostic for inferences about the self. Therefore, people will be more likely to exercise restraint for decisions at the framed beginning or end (when actions are deemed telling of the self), but indulge and splurge in the middle. We employ various ways of framing beginnings, middles, and ends: semantic framing and position on a card, chart or list. Most of these framing approaches—but not all—involves temporal sequences, since it is very natural for people to think of their lives in terms of temporal sequences (e.g., beginning of the quarter, middle of the day, end of the week). We tested our predictions in the context of long-term health goals (i.e., eating healthily, watching one’s weight), financial goals (i.e., saving, watching one’s spending), and intellectual goals (i.e., reading informative magazines).

In the first two experiments, we tested the notion that decisions framed as occurring at the beginning or end (vs. middle) of a constructed sequence are more diagnostic in inferences about the self (Experiment 1) and others (Experiment 2). Experiment 3 examined the effect of position framing on snack choices. Experiments 4 and 5 explored the moderating role of goal importance, to further demonstrate that the desire to maintain a positive self-concept influences self-control. Finally, Experiment 6 highlighted the self-signaling nature of our findings by exploring the moderating role of experienced self-control conflict. Furthermore, this experiment sought to rule out the possibility that framed positions influence self-control through perceptions of impact on long-term goal.

Experiment 1: It Was Not Me in the Middle

In this experiment, we examine the diagnosticity of framed beginning, middle, and end positions through their effects on the self-concept. If beginning and end (vs. middle) positions are seen as more self-diagnostic, then failures to exercise restraint at the beginning or end (vs. middle) should have stronger negative implications for the self-concept in the form of lower self-appraisals. Participants were coffee drinkers who considered a scenario in which they were on caffeine “detox,” but succumbed to temptation and consumed caffeinated coffee either at the beginning, middle or end of a constructed sequence on a frequent-buyer card. Participants were then asked to indicate how they would feel about
themselves following this event. We predicted that because beginning and end actions are seen as more diagnostic of one’s characteristics than middle actions, framing a self-control failure as occurring at the beginning or end (vs. middle) would make participants feel worse about themselves.

Method

Participants. Ninety-eight coffee drinkers (40 male, $M_{age} = 23.78$) recruited near a campus coffee-shop completed the experiment in return for candy. Sample size was predetermined to be between 20 and 30 participants per cell, based on recommendations of at least 20 per cell (Simmons, Nelson, & Simonsohn, 2011). Data collection occurred during scheduled time slots, returning a total of 98 participants. No data were excluded.

Procedure. The experiment used a 3 position (beginning vs. middle vs. end) between-subjects design. Participants read a scenario about being on caffeine detox and facing temptation at their local coffee shop. To enhance the realism of the scenario, participants were recruited in the vicinity of a coffee shop at a university student-center. We manipulated incidental position in the scenario through progress on a frequent-buyer card. Depending on the condition, the scenario read: “Imagine that you have been on ‘coffee detox’ for a few days. During your coffee detox you must refrain from drinking any caffeinated beverages, so you have been drinking decaf coffee, herbal teas and other noncaffeinated beverages. Today, you walk into you regular local coffee shop with your frequent buyer card. You are at the beginning/in the middle/at the end of your frequent buyer card. You consider your choices of noncaffeinated drinks for a moment, but then you give into temptation: you order and drink a large cup of caffeinated coffee.” A picture of the frequent-buyer card titled “buy 9 get the 10th free” was displayed under the scenario with one, five or eight out of nine holes punched—depending on the condition (beginning, middle or end, respectively; Figure 1). We note the position of the choice on the frequent-buyer card was incidental to when the assumed caffeine-detox period started or ended, and thus was not meaningful (i.e., not goal-relevant): it was not the case that failing at the beginning of the card corresponded to failing on the first day of the caffeine detox.

To assess how the event described in the scenario would influence self-appraisals, we asked participants to indicate how they would feel about themselves on two 7-point scales, ($1 = bad, 7 = good$ and $1 = disappointed, 7 = proud$, respectively).

Results and Discussion

We combined participants ratings of how they would feel about themselves to form a measure of self-appraisal ($r = .67, p < .001$). An analysis of variance (ANOVA) of this measure revealed the predicted effect of position on feelings about the self, $F(2, 95) = 3.74, p = .027$. In particular, when the failure to resist temptation occurred at the beginning ($M = 3.23, SD = .84$), participants indicated that they would feel less positively about themselves than when this failure occurred in the middle ($M = 3.92, SD = 1.53$), $t(65) = 2.33, p = .023$. Similarly, failure to exercise restraint lead to lower self-appraisals at the end ($M = 3.19, SD = 1.12$) than in the middle, $t(59) = 2.11, p = .039$. We found no differences in self-appraisals between beginning and end conditions ($t < 1$).

These results suggest an effect of framed position on self-diagnosticity. Participants saw framed beginning and end (vs. middle) choices as more self-diagnostic, such that failures to exercise restraint in these positions had a greater negative impact on self-appraisals. In the next experiment, we further investigate the diagnosticity of framed beginning, middle, and end positions by looking at their effect on interpersonal judgments.

Experiment 2: The Differential Diagnosticity of Framed Beginning, Middle, and End Positions

In this experiment, we tested the diagnosticity of actions framed as occurring at the beginning, middle, and end in the context of interpersonal judgments. When another person’s action is seen as diagnostic, this action should have a greater influence on how the person is judged. For example when a failure to exercise restraint is deemed diagnostic, people will see the person who failed as less committed to the relevant goal or as having less willpower. Furthermore, since the processes through which people make judgments of themselves tend to mirror those through which they make judgments of others, we can draw inferences about self-diagnosticity by documenting the perceived diagnosticity of other people’s actions (Bem, 1972). Specifically, we tested the notion that a failure to exercise restraint in the framed beginning or end (vs. middle) is a stronger signal of lack of goal-commitment, in particular among judges who deem the goal important.

Participants read a scenario about a friend, who decided to go on caffeine detox, but succumbed to temptation and consumed caffeinated coffee either at the beginning, middle or end of a frequent-buyer card. Participants then drew inferences about the actor’s level of commitment to the caffeine detox. Moving to judgments of others, we also measured participants’ beliefs about caffeine (bad or good for one’s health), expecting that those who believed caffeine is bad would judge a person who succumbs to temptation...
more harshly if the person did so at the beginning or end (vs. middle) of a sequence posed by the frequent-buyer card. For individuals who believe caffeine is good, information that someone decided to go on coffee detox should be a signal of high commitment regardless of position because the person’s goal is not desirable. Indeed, research shows expressing an undesirable goal is a strong signal of commitment to that goal (e.g., the discounting principle; Einhorn & Hogarth, 1986; Kelley, 1973). We note that in Experiment 1, we recruited coffee drinkers and asked them to assume they had the goal before drawing self-inferences. Therefore, in that experiment—unlike in the present experiment—we did not expect moderation by whether or not participants endorsed the goal.

Method

Participants. One hundred forty-three native English speakers (87 male, $M_{age}$ between 25 and 34) based in the United States were recruited through Amazon’s Mechanical Turk to take part in this survey in return for monetary compensation ($1.00). Sample size was predetermined to be between 20 and 30 participants per cell. No data were excluded.

Procedure. The experiment used a 3 position (beginning vs. middle vs. end) by beliefs about caffeine (being bad or good for one’s health) between-subjects design, with the first factor manipulated and the second measured. After completing a brief series of demographic questions, participants read a short scenario—similar to the one used in Experiment 1—about another person being on caffeine detox and facing temptation at a local coffee shop. To control for gender effects, we programmed the computerized study to match the gender of the participant to that of the person in the scenario: we assigned female participants to read about a female actor (Jane), whereas male participants read about a male actor (John). As in the previous experiment, we manipulated incidental position in the scenario through participants’ progress on a frequent buyer card (see Figure 1).

For example, in the beginning condition, the scenario read as follows: “Your friend Jane/John mentioned s/he is currently on ‘coffee detox.’ During her/his coffee detox s/he has been trying to refrain from drinking any caffeinated beverages. Instead, s/he has been trying to drink decaf coffee, herbal teas and other noncaffeinated beverages. Today, as you and Jane/John walk into her/his regular local coffee shop, Jane/John pulls out her/his frequent buyer card (s/he gets points for any beverage s/he buys). S/he is at the beginning of her/his frequent buyer card. S/He considers various choices of noncaffeinated drinks for a moment, but then s/he gives into temptation: s/he orders and drinks a large cup of caffeinated coffee.” In the middle and end conditions, we replaced the words “at the beginning” with “in the middle” and “at the end,” respectively. To assess how the event described in the scenario influenced participants’ perceptions of Jane/John, we asked them to indicate the extent to which they believe Jane/John is (a) “serious about coffee detox” and (b) “committed to changing this habit” (1 = not at all, 7 = very much). Actions that are viewed as more diagnostic should have a greater influence on participants’ interpersonal ratings, such that Jane/John should be deemed less serious about and less committed to the detox. Finally, to measure participants’ beliefs about caffeine, we asked them to indicate the extent to which they “believe caffeinated coffee is bad or good for [one’s] health” (1 = very bad, 7 = very good).

Results and Discussion

Beliefs about caffeine being bad or good ($M = 3.89$, $SD = 1.07$, $Mdn = 4.00$) were not affected by the position manipulations ($F < 1$). We combined participants’ interpersonal judgments of Jane/John to form a measure of inferred commitment ($r = .87$, $p < .001$). We found no effect of gender ($F < 1$), so we exclude this variable from the subsequent reports.

To test our hypothesis, we ran a regression on inferred commitment using the following independent variables: (1) two dummy variables for position: beginning ($1 = beginning$, $0 = middle$ or end) and end ($1 = end$, $0 = beginning$ or middle); (2) beliefs about caffeine; (3) the interaction of beliefs about caffeine with the beginning dummy; and (4) the interaction of beliefs about caffeine with the end dummy. The overall regression model explained a significant proportion of variance in inferred commitment ($R^2 = .90$, $F(6, 136) = 95.41$, $p < .001$, $F^2 = 9.0$). The regression yielded a main effect of the beginning dummy variable ($\beta = -.47$), $t(136) = -2.29$, $p = .023$ ($d = -.39$, $r = -.19$), and a main effect of the end dummy variable ($\beta = -.55$), $t(136) = -2.81$, $p < .01$ ($d = -.47$, $r = -.23$). It is important to note that these main effects were qualified by the predicted interactions of Beliefs about Caffeine × Beginning, ($\beta = .42$), $t(136) = 2.10$, $p = .038$ ($d = .35$, $r = .17$), and Beliefs about Caffeine × End ($\beta = .61$), $t(2136) = 3.06$, $p < .01$ ($d = .52$, $r = .25$), on inferred commitment.

To explore and graph these interactions (see Figure 2), we conducted a spotlight analysis at one standard deviation below and above the mean of beliefs about caffeine (Aiken & West, 1991). At one standard deviation below the mean belief score (negative views of caffeine), participants inferred that Jane/John was less committed when her/his lack of restraint occurred at the beginning ($M = 2.11$) than when it occurred in the middle ($M = 2.98$), $t(136) = -2.169$, $p = .032$ ($d = -.37$, $r = -.18$). Similarly, participants inferred that Jane/John was less committed when her/his lack of restraint occurred at the end ($M = 2.03$) than when

![Figure 2. Inferred commitment of Jane/John as a function of (a) whether her/his self-control failure occurred at the framed beginning, middle, or end and (b) participants’ own beliefs about caffeine (−1 SD = Bad; +1 SD = Good). Only participants holding negative beliefs about caffeine (−1 SD) inferred that Jane/John was less committed when her/his self-control failure occurred at the beginning or end (vs. middle: Experiment 2).](image-url)
it occurred in the middle, \( t(136) = -2.174, p = .031 \) (\( d = -.37, r = -.18 \)). However, at one standard deviation above the mean belief score (positive views of caffeine), there were no differences in inferred commitment between beginning (\( M = 3.12 \)) and middle (\( M = 2.76, t < 1 \), and only a marginal difference between end (\( M = 3.52 \)) and middle, \( t(136) = 1.88, p = .06 \).

These results suggest participants with negative beliefs about caffeine saw beginning and end (vs. middle) choices as more diagnostic, such that failures to exercise restraint in these positions had a greater negative impact on inferred commitment. Furthermore, in the middle, these participants’ inferred-commitment ratings were similar to those of participants with positive beliefs about caffeine. Indeed, a series of regressions showed beliefs about caffeine predicted inferred commitment at the beginning (\( \beta = .29, t(49) = 2.13, p = .039 \) (\( d = .37, r = .18 \)), and end (\( \beta = .49, t(42) = 3.63, p = .001 \), respectively (\( d = .61, r = .29 \)), but not in the middle (\( t < 1 \).

Because self-judgment processes tend to mirror interpersonal-judgment processes, we take these findings as evidence of the greater self-diagnosticity of framed beginning and end (vs. middle) positions. In the next experiment, we build on this knowledge to test for the effect of framed positions on real snack choices in a natural context.

**Experiment 3: Kit Kats in the Middle (A Field Study)**

In this field experiment, participants from a student population known to value health goals—and who were unaware they were taking part in an experiment—chose between indulgent and healthy snacks while exposed to one of three messages presenting their choices as being at the beginning, middle, or end of a given time frame. We predicted participants exposed to the middle message (low self-diagnosticity) would be more likely to succumb to the temptation to choose an indulgent snack than participants exposed to the beginning or end messages (high self-diagnosticity).

**Method**

**Participants.** One hundred sixty-three MBA students unknowingly took part in this experiment. Due to the dichotomous nature of the dependent variable in this experiment, sample size was predetermined to be 40 to 50 per cell. We collected as many participants as possible within a 2-hour window at a business school, and no data were excluded. Given the observational nature of this experiment, we did not collect any demographic information from participants. In a pretest (\( N = 152 \)), 68.42% of participants from this population indicated that it was important for them to “watch what they eat,” compared with 14.47% for whom it was neither important nor unimportant and 17.11% for whom it was unimportant, \( \chi^2 (2, N = 152) = 84.37, p < .001 \), suggesting the majority of these students tend to value healthy-eating goals.

**Procedure.** The experiment employed a 3 position (beginning vs. middle vs. end) between-subjects design, where beginning and end (vs. middle) conditions corresponded to high (vs. low) self-diagnosticity. We offered two types of snacks, with one type (raisin packets) typically considered healthier than the other (Kit Kat bars), as confirmed by a pretest (\( N = 62 \)) in which we presented participants drawn from the same pool with a picture of a raisin packet and a Kit Kat bar next to each other and asked them to rate each food item in terms of healthiness, caloric content, fat content and sugar content (seven-point scales). The results showed that raisins are deemed healthier (\( M_{\text{raisins}} = 5.16, SD = 1.04 \);\( M_{\text{KitKat}} = 2.18, SD = 1.26 \), \( F(1, 60) = 197.48, p < .001 \), and lower in calories (\( M_{\text{raisins}} = 3.92, SD = 1.35 \);\( M_{\text{KitKat}} = 5.65, SD = 1.28 \), \( F(1, 61) = 75.94, p < .001 \), fat (\( M_{\text{raisins}} = 2.65, SD = 1.49 \);\( M_{\text{KitKat}} = 5.08, SD = 1.36 \), \( F(1, 61) = 90.73, p < .001 \), and sugar (\( M_{\text{raisins}} = 4.98, SD = 1.22 \);\( M_{\text{KitKat}} = 5.79, SD = 1.39 \), \( F(1, 61) = 20.55, p < .001 \), than Kit Kat bars.

In the main experiment, the snacks were presented on two separate trays placed on a cocktail table in the hall of a business school’s classroom level. We note that for this student population, the presence of free snacks is not unusual. Behind the snack table, an easel featured a 24-in. \times 36-in. poster on which we displayed the message manipulating position. Depending on the condition, the poster read, “Start your afternoon! Grab a snack” (beginning/ high self-diagnosticity), “End your morning! Grab a snack” (end/ high self-diagnosticity), or “Keep your day going! Grab a snack” (middle/low self-diagnosticity). All participants saw the message at midday but, depending on the condition, the posters encouraged them to think of that moment as the beginning, middle, or end of a given, arbitrarily selected, temporal sequence. The posters were rotated, such that each poster appeared once during the study. We also ensured the amount of snacks on each tray remained roughly stable across all conditions (between 40 and 60 snacks). A research assistant coded participants’ choices outside of their awareness.

**Results and Discussion**

We measured restraint by the proportion of participants who selected the goal-consistent, healthy snacks (raisins). In support of our hypothesis, the likelihood of healthy choices changed as a function of framed position, \( \chi^2 (2, N = 163) = 6.71, p = .035 \). Participants were less likely to choose the healthy snack when exposed to the “middle” message (low self-diagnosticity) than to the “start” or “end” messages (high self-diagnosticity). Specifically, 22% of participants chose the healthy snack after seeing the middle message, which was lower than the 39.7% who chose the healthy snack after exposure to the start message, \( \chi^2 (1, N = 108) = 3.88, p = .049 \) (\( d = .39, r = .190 \)), or the 45.5% of participants who chose the healthy snack after exposure to the end message, \( \chi^2 (1, N = 105) = 6.40, p = .011 \) (\( d = .51, r = .25 \)). The likelihoods of healthy choices in the start- and end-message conditions were not statistically different. We note these percentages were all lower than 50%, suggesting an overall preference for Kit Kat bars that is unrelated to our hypothesis. Although, this preference for the indulgent snack appears inconsistent with the fact that participants in this subject pool generally value healthy-eating goals, it is hard to interpret or speculate about these percentages without comparing them with those in a less health-conscious group.

These results show framing participants’ choices as being in the middle of a given time frame promotes indulgence, compared to framing the same choices as being at the beginning or end. We note the perceived goal impact of choosing a Kit Kat bar—that is, the extent to which such a choice could undermine one’s health—should have been greater in the middle condition. Indeed, research on choice bracketing suggests putting a choice within the context of a broader decision pattern makes goal-inconsistent decisions
seem more problematic for long-term interests, and thus promotes self-control (Myrseth & Fishbach, 2009; Rachlin, 2000; Read, Loewenstein, & Rabin, 1999). Therefore, the middle condition, in which the snack choice is part of a broader “day” time frame, should have elicited more self-control than beginning or end conditions that use narrower “morning” and “afternoon” time frames. Hence, the choices we observed in this study are unlikely to be guided by perceptions of goal impact.

Rather, we argue this pattern of behavior occurs because beginning or end (vs. middle) framing of choice triggers self-concept concerns to a greater extent, such that goal inconsistencies have a greater impact on the self-concept. Thus, choosing raisins over a Kit Kat bar at the beginning or end (vs. middle) is a stronger indication that one is “health-conscious.” In the next experiment, we examine the moderating role of goal importance, that is, the extent to which a goal-related identity is important to the self-concept.

Experiment 4: When Savers Splurge—The Moderating Role of Financial Goal Importance

As with health-related goals, the attainment or maintenance of financial goals (e.g., saving, watching one’s spending) requires a fair amount of self-control. This experiment tested the moderating role of goal importance on the relationship between self-diagnosticity (induced through positions) and self-control in the context of financial goals. Participants assigning different levels of importance to financial goals indicated their willingness to pay for various products. Previous research suggests such price-assignment tasks tend to be highly correlated with actual spending behaviors (Carson, Flores, Martin, & Wright, 1996); thus we can infer the extent to which participants exercised restraint or “splurged” through their willingness to pay for these items (see also Vohs & Faber, 2007). Using the title of the survey, we framed purchase decisions as being in different positions in constructed temporal sequences. We expected participants for whom financial goals are important to exhibit greater willingness to spend in the middle (low self-diagnosticity) than at the beginning or end (high self-diagnosticity). These participants should get a boost to their self-concept from thinking of themselves as “financially responsible,” and should thus be more sensitive to self-diagnosticity cues in this context. In contrast, we predicted participants for whom financial goals are less important would not respond to such cues. We also test an important consequence of this moderation, namely that in the middle (low self-diagnosticity), goal importance would not predict restraint: People committed to the goal would splurge as much as those uncommitted to it.

Method

Participants. Two hundred twenty-three undergraduate students (91 male, M_age = 19.86) took part in this experiment online for a chance to win a $45 cash prize through a raffle. The chances of winning were 1 in 45. Sample size was predetermined to be between 20 and 30 per cell. We collected as many responses as possible over a 3-week period spanning the last week of the academic winter quarter, the 1-week intersession, and the first week of the spring quarter; no data were excluded.

Procedure. The experiment employed a 3 position (beginning vs. middle vs. end) by goal importance between-subjects design, with position manipulated and goal importance as a measured variable. Beginning and end (vs. middle) conditions corresponded to high (vs. low) self-diagnosticity. Participants completed a survey presumably interested in how people evaluate different types of products and make purchase decisions. We manipulated position with the title of the survey, which was prominently displayed throughout the computerized survey and was relevant to the 3-week period during which the survey was administered: depending on the condition, the survey title was “START OF QUARTER SHOPPING,” “MIDDLE OF YEAR SHOPPING,” or “END OF QUARTER SHOPPING.”

Following a modified version of a procedure used by Vohs and Faber (2007), participants read the names of the following 12 products on a computer screen and indicated how much they would be willing to pay for each: wallet, toaster, vacuum, dress shoes, sunglasses, designer jeans, wristwatch, backpack, electric toothbrush, travel umbrella, leather belt, and bath towel. We selected the items so participants would not have an exact knowledge of their cost, thus allowing for some variance in willingness to spend. To ensure the gender neutrality of the products, we provided no images. We also randomized the order of items on the list across participants to eliminate any order effects. After this price-assignment task, participants answered several questions, including two final questions aimed at assessing their level of commitment to financial goals: “How important is it for you to watch your spending?” and “How important is it for you to save money?” (1 = not at all, 10 = very much).

Results and Discussion

To form an index of financial-goal importance, we averaged participants’ ratings of how important watching their spending and saving money is for them (r = .71, p < .001). Goal importance ranged from 1 to 10 (M = 7.80, SD = 1.78, Mdn = 8.00). We note that although goal importance was measured after the respective position manipulations, separated by demographic questions, these manipulations did not affect the measure (F < 1). We summed the prices participants indicated for each item to form our main dependent measure of willingness to spend.

To examine how goal importance moderated the effect of position on willingness to spend, we ran a regression on willingness to spend using the following independent variables: (1) two dummy variables for position: beginning (1 = beginning, 0 = middle or end) and end (1 = end, 0 = beginning or middle); (2) financial-goal importance; (3) the interaction of goal importance with the beginning dummy; and (4) the interaction of goal importance with the end dummy. The overall regression model explained a significant proportion of variance in willingness to spend (R^2 = .55), F(6, 217) = 43.44, p < .001, F^2 = 1.22. The regression yielded a marginal main effect of the beginning dummy variable (β = .59), t(217) = 1.64, p = .10 (d = .22, r = .11), and a main effect of the end dummy variable on willingness to spend (β = 1.26), t(217) = 3.65, p < .001 (d = .50, r = .24). Most importantly, these main effects were qualified by a marginal interaction of Goal Importance × Beginning (β = −.62), t(217) = −1.69, p = .093 (d = −.23, r = .11), and an interaction of Goal Importance × End (β = −1.31), t(217) = −3.78, p < .001 (d = −.51, r = .25), on willingness to spend. We speculate the difference between willingness to spend at the beginning versus middle might have been
only marginal because students associated “beginning of the quar-
ter” with having more money at their disposal to buy school/dorm supplies as many of them head back to school after spending time at home.

To explore and graph these interactions (see Figure 3), we conducted a spotlight analysis at one standard deviation above and below the mean of goal importance. At one standard deviation above the mean of goal importance, participants were willing to spend less money at the beginning ($M = $402.09) than in the middle ($M = $552.51), $t(217) = -2.21$, $p = .028$ ($d = -0.30$, $r = -0.15$). Similarly, participants were willing to spend less money at the end ($M = $190.46) than in the middle, $t(217) = -2.88$, $p < .01$ ($d = -0.39$, $r = -0.19$). At one standard deviation below the mean of financial-goal importance, there were no differences in willingness to spend between beginning ($M = $645.23) and middle ($M = $489.68), $t(217) = 1.42$, ns. However, when comparing end and middle, there was a reversal of the pattern, such that willingness to spend was greater at the end ($M = $799.11) than in the middle, $t(217) = 2.54$, $p = .01$. Looking at the reversal when comparing middle and end at lower levels of goal importance, we speculate that participants might have associated the end with the notion of “reward” and decided to take full advantage of this “last opportunity” to splurge even more. Overall, these results confirmed the prediction that people for whom financial goals are important would exercise more restraint under high (vs. low) self-diagnosticity (i.e., beginning or end vs. middle framing).

Next, we ran a series of regressions looking at the moderating role of position on the relationship between goal importance and willingness to spend. As expected, goal importance negatively predicted willingness to spend at beginning and end positions ($\beta = -0.28$, $t(78) = -2.6$, $p = .011$ ($d = -0.59$, $r = -0.28$) and ($\beta = -0.42$, $t(75) = -4.06$, $p < .001$, respectively ($d = -0.94$, $r = .42$). However, in the middle, goal importance did not predict willingness to spend ($t < 1$).

We find participants for whom financial goals are important were more likely to exercise restraint under conditions of high (vs. low) self-diagnosticity—that is, for decisions framed as occurring at the beginning or end (vs. middle) of a constructed temporal sequence. This is because participants who value financial goals derive more value from maintaining a positive self-concept in this domain (e.g., I am financially responsible). By contrast, self-diagnosticity cues were irrelevant to participants whom financial goals are less important, and at the lowest levels of goal importance, participants were less likely to exercise restraint at the end versus middle. In addition, whereas at the beginning and end (high self-diagnosticity), high goal importance decreased planned expenditures, in the middle (low self-diagnosticity) participants committed to financial goals were willing to splurge as much as those not committed to financial goals. The next experiment sought to extend these findings to the context of healthy-eating goals, using a visual (rather than semantic) manipulation of position.

**Experiment 5: The Moderating Role of Health Goal Importance**

This experiment tested the moderating role of goal importance on the relationship between self-diagnosticity (framed position) and restraint in the context of health goals. We measured restraint through the evaluations of goal-inconsistent versus goal-consistent objects. Indeed, research on self-control posits that motivational states influence the evaluation of goal-related objects and these evaluative processes in turn promote successful goal pursuit (see Touré-Tillery & Fishbach, 2014). Thus, motivation can be measured by the degree to which a goal-consistent object is evaluated positively, the extent to which a goal-inconsistent object is evaluated negatively, or the relative evaluation of goal-consistent and goal-inconsistent objects (Brendl, Markman, & Messner, 2003; Ferguson & Bargh, 2004; Herek, 1987; Fishbach, Zhang, & Trope, 2010).

Participants with varying levels of commitment to health goals rated the appeal of healthy and indulgent food-items on a daily menu (Fishbach & Zhang, 2008; Wilcox, Vallen, Block, & Fitzsimons, 2009), which presented that day as being at the beginning, middle, or end of a 7-day sequence of menus. We expected the effects of self-diagnosticity (framed position) on restraint to be limited to people for whom health goals are important. Specifically, we predicted these participants would exhibit more restraint at the beginning or end (high self-diagnosticity) than in the middle (low self-diagnosticity). However, we expected participants less committed to health goals to be unaffected by position manipulations. In addition, as in the previous experiment, we expected that for actions at the beginning or end, as goal importance increased, participants would be more likely to exercise self-control. However, in the middle, goal importance would not predict self-control.

**Method**

**Participants.** Ninety-nine students (54 male, $M_{age} = 20.16$) came to the university’s research laboratory to participate in this experiment in return for $2.00. Sample size was predetermined to be between 20 and 30 per cell.

**Procedure.** The experiment employed a 3 position (beginning vs. middle vs. end) by goal importance between-subjects design, with position manipulated and goal importance as a measured variable. In a private room, participants reviewed a restaurant menu corresponding to the actual day of the experiment (e.g., those who participated on Tuesday saw a menu titled “Tuesday’s
Menu”). We manipulated position and self-diagnosticity by displaying a chart under the title of the menu in which the day was outlined in red and positioned at the beginning, middle, or end of the other 6 days of the week. For example, those who completed the experiment on Tuesday saw one of the three versions of the chart displayed in Figure 4, depending on the condition. We conducted the study from Tuesday through Friday, to control for any effect related to expectations about where each day of the week should appear on such a weekly chart (i.e., Monday first, Wednesday in the middle, etc.). The menu in this experiment featured two types of food items: five healthy and five indulgent (one starter, three entrées, and one dessert for each category). We restricted the experiment to participants with no relevant dietary restrictions. Those with such restrictions (e.g., vegetarians) might have had stronger negative evaluations of the foods from which they abstain.

Healthy foods included a garden salad (starter), entrées such as “Late Grilled Chicken Platter (tender grilled chicken breast served with assorted seasonal vegetables and fresh seasonal fruits),” and a fresh fruit plate (dessert). Indulgent options included deep fried chicken wings (starter), entrées such as “Bacon Cheese Burger (ground chuck patty covered with melted cheddar and crispy bacon, served with French fries),” and chocolate mousse (dessert). A pretest (N = 45), in which participants rated the healthiness of each menu item (1 = unhealthy, 7 = healthy), confirmed they saw the five healthy food items as generally healthier (M = 6.26, SD = .52) than the five indulgent ones (M = 2.35, SD = .83), t(44) = 23.48, p < .001.

After reviewing the menu, participants in the main experiment indicated how appealing they found each of the 10 menu items (1 = not appealing, 7 = very appealing). Following the food-rating task, they answered a series of filler and demographic questions including two final questions, which assessed goal importance by measuring the extent to which (1) eating healthily and (2) watching their weight are important to them (1 = not at all, 7 = very much). Three participants completed the initial food-rating task in less than three standard deviations under the mean of completion times (i.e., between 5.48 and 14.84 seconds) and were excluded from the subsequent analyses.

Results and Discussion

To form a measure of health-goal importance, we averaged participants’ ratings of how much they value eating healthily and watching their weight (r = .44, p < .001). Goal importance ranged from 1 to 7 (M = 4.30, SD = 1.44, Med = 4.50). We note that, as in the previous experiment, position manipulations did not affect goal importance (F < 1). We then combined participants’ evaluations of the five healthy items and five indulgent items to form two separate appeal indices for each food type. We conducted repeated measures ANOVAs of participants’ appeal ratings using a custom model with the following independent variables: (1) food type (healthy vs. indulgent); (2) two dummy variables for illusory position: beginning (1 = beginning, 0 = middle and end) and end (1 = end, 0 = beginning and middle); (3) health goal importance, (4) the interaction of goal importance with the beginning dummy; and (5) the interaction of goal importance with the end dummy. Food type was within-subjects, whereas all other factors were between-subjects. The analysis revealed a main effect of food type, F(1, 90) = 41.65, p < .001, an interaction of Food Type × Beginning dummy variable, F(1, 90) = 4.12, p = .045, an interaction of Food Type × End dummy variable, F(1, 90) = 8.19, p = .005, and an interaction of Food Type × Goal Importance, F(1, 90) = 24.16, p < .001. Most importantly, the analysis revealed a three-way interaction of Food Type × Goal Importance × Beginning, F(1, 90) = 5.09, p = .027, and a three-way interaction of Food Type × Goal Importance × End, F(1, 90) = 9.03, p = .003.

For ease of reporting, we calculated the difference between the appeal ratings of healthy items and those of indulgent items to form a restraint index corresponding to the “relative appeal” of healthier foods compared with indulgent foods on the menu. To explore and graph these interactions (see Figure 5), we conducted a spotlight analysis at one standard deviation above and below the mean of goal importance. At one standard deviation above the mean of goal importance, the restraint index was greater at the beginning (M = 7.74) than in the middle (M = 6.81), t(90) = −1.99, p = .049 (d = −.26, r = −.13). Similarly, the restraint index was greater at the end (M = 7.86) than in the middle, t(90) = −2.18, p = .032 (d = −.30, r = −.15). At one standard deviation below the mean of financial-goal importance, there were no differences in restraint between beginning (M = 6.44) and middle (M = 7.03), t(90) = 1.33, ns. However, when comparing end and middle, there was a reversal of the pattern, such that restraint was lower at the end (M = 6.03) than in the middle, t(90) = 2.15, p = .03. As with the previous experiment, we speculated the reversal when comparing middle and end at lower levels of goal commitment might have occurred due to the common association of end with “reward” and “last opportunity,” leading participants to exercise even less restraint.

Finally, we ran a series of repeated measures ANOVAs of participants’ appeal ratings on Food Type (healthy vs. indulgent) × Goal Importance to look at the effect of goal importance on restraint as a function of position (beginning, middle, and end). Food type was within-subjects, whereas goal importance was between-subjects. The tests revealed goal importance positively influenced restraint at the beginning, F(1, 30) = 7.41, p = .011, and end, F(1, 29) = 15.06, p = .001, but had no effect in the middle (F < 1).

In sum, extending Experiment 4, we find participants for whom health goals are important were more likely to exercise restraint at the framed beginning and end (vs. middle)—that is, under conditions of high (vs. low) self-diagnosticity. By contrast, self-diagnosticity cues were irrelevant to participants for whom health goals are less important, and at the lowest levels of goal importance participants were less likely to exercise restraint at the end.

Figure 4. Charts used for beginning, middle, and end framing on daily menus (Experiment 5). See the online article for the color version of this figure.
than in the middle. In addition, in the middle (low self-diagnosticity), participants committed to health goals were willing to indulge as much as those not committed to these goals, further highlighting the role of the self-concept in self-control.

We argue people are more likely to exercise restraint when actions are self-diagnostic because they aim to present themselves to themselves in a positive light (self-signaling; Bodner & Prelec, 1996). However, people might also be interested in presenting a favorable image of the self to others (social-signaling; Berger & Heath, 2008; Herman, Roth, & Polivy, 2003). This possibility is made even more plausible by the fact that most decisions consistent with self-control also tend to be socially desirable. Although self- and social-signaling are not mutually exclusive, our theorizing explores the role of private concerns about one’s self-concept. If, as we argue, our predicted patterns of results are primarily driven by private self-concept concerns rather than public self-presentation ones, then only people for whom a decision presents a personal self-control conflict should respond to self-diagnosticity cues. By contrast, people who do not experience a self-control conflict should not be influenced by self-diagnosticity—that is, they should not necessarily favor the goal-consistent, socially desirable decision. In the final experiment, we tested for the moderating role of experienced self-control conflict.

**Experiment 6: The Moderating Role of Self-Control Conflict**

This experiment tested the moderating role of experienced self-control conflict (i.e., whether the decision presents a subjective self-control conflict) on the relationship between self-diagnosticity and restraint. A self-control conflict occurs when a choice set presents a trade-off between a goal-consistent option and a goal-inconsistent option that the chooser values. The self-control conflict is subjective because what is valuable for one person may not be attractive for another person. Furthermore, self-control conflict is a different construct than goal importance. A chooser for whom a goal is important may face a choice that does not present a self-control conflict; if for example, the goal-inconsistent option (temptation) is unattractive for the chooser. In this case, a goal-consistent choice may not be evidence of self-control, but rather a pure expression of preference: Choosing between carrot sticks and chocolate bars for a health-minded person who does not like chocolate will not pose a self-control conflict. A moderation by self-control conflict is expected if the effect of self-diagnosticity on restraint is driven primarily by people’s desire to maintain a positive self-concept—rather than to make a positive impression on real or imagined others. Using the context of intellectual goals, our measure of restraint was participants’ ratings of the appeal of highbrow magazines compared with lowbrow ones.

Relative to highbrow magazines (e.g., *The Economist*), lowbrow magazines (e.g., *Cosmopolitan*) correspond to temptations and are viewed as less flattering (to self and others), because they typically offer immediate pleasure but provide minimal long-term benefits in terms of educational or intellectual enrichment (see Read, Loewenstein, & Kalyanaraman, 1999). We framed position by presenting the magazine evaluation task as being the first, third, or last item on a list of unrelated evaluative activities. We assessed subjective self-control conflict by asking participants to rank different types of news by order of importance to them. The idea is that highbrow and lowbrow magazines featuring highly ranked types of news will provide more valuable choice options, and thus will be more likely to elicit a self-control conflict. For participants facing a subjective self-control conflict, we predicted more restraint at the beginning and end (vs. middle), such that they would find highbrow magazines more appealing than lowbrow ones. However, for participants not experiencing a self-control conflict, we predicted no effect of framed position on restraint (i.e., similar evaluations for highbrow and lowbrow options).

Furthermore, we wanted to rule out the possibility that positions act not only as self-diagnosticity cues, but also influence the perceived impact of actions on goal attainment. Accordingly, participants rated the efficacy of highbrow and lowbrow magazine-subscriptions for intellectual goals—that is, the extent to which these magazines are deemed capable of hindering or advancing these goals. Recent research suggests the motivation to reach a finite goal (e.g., complete nine proofreading tasks) tends to be higher at the beginning and end stages of goal pursuit because actions in these positions appear to have a greater marginal impact on goal attainment (Bonezzi, Brendl, & De Angelis, 2011; Koo & Fishbach, 2012). For example, when working on the goal to proofread nine passages, completing the first passage accomplishes 100% of the progress to-date and completing the last passage corresponds to 100% of the remaining progress. However, proofreading the 5th passage accomplishes only 20% of to-date and remaining progress, and thus appears less impactful for goal attainment. Although this psychophysical perspective on goal pursuit is naturally restricted to finite goals with clear beginning and end states (e.g., as in Tourné-Tillery & Fishbach, 2012), it is possible that such perceptions of marginal impact extend to framed positions. In particular, actions framed as being at beginning or end (vs. middle) of a constructed sequence might motivate goal-consistent behavior because they appear to have a greater impact on long-term goal attainment. However, we predicted framing actions as being at the beginning or end (vs. middle) will promote self-control because beginning and end actions appear to have a greater impact on the

**Figure 5.** Restraint index (difference between appeal ratings of healthy items and indulgent items) at framed beginning, middle, and end as a function of health-goal importance (−1 SD = Low; +1 SD = High). Only participants with high health-goal importance displayed greater restraint in rating menu items at the beginning and end (vs. middle; Experiment 5).
self-concept, but not because they influence the perceived efficacy of options for the goal.

**Method**

**Participants.** Two hundred eighty-one (105 male, $M_{age} = 25.04$) university students and Chicago residents participated in this experiment online for a chance to win a $45 cash prize through a raffle. The chances of winning were 1 in 45. Because one of our independent variables was measured and dichotomous (self-control conflict: yes vs. no), sample size was predetermined to be large enough (270 to 300) to ensure an acceptable number of observations (at least 20) per cell in each of the self-control conflict groups. No data were excluded.

**Procedure.** The experiment employed a 3 (position: beginning vs. middle vs. end) $\times$ 2 (subjective self-control conflict: yes vs. no) between-subjects design. Position/self-diagnosticity was manipulated and subjective self-control conflict was measured. Unlike in Experiments 3 through 5, we used a nontemporal manipulation of position. In the middle condition (low self-diagnosticity), participants read that the study was “interested in people’s evaluations of well-known products in categories such (1) films, (2) apps, (3) magazines, (4) books, and (5) music” and that in this particular survey, they would “evaluate items in the third category on this list.” In the beginning and end conditions (high self-diagnosticity), the magazine category appeared at the beginning or end of this list, and participants read they would evaluate items in the “first” or “last” categories, respectively. In addition to these written instructions, we displayed a vertical list on which “magazines” appeared first, third, or last (see Figure 6). This list appeared as a heading throughout the computerized survey. In this manipulation, the sequence was completely constructed, because participants knew they would not engage in any of the other activities listed.

As a measure of self-control, participants had to review and rate the appeal of two subscription offers (each for 10 magazine issues) featuring two different types of magazines: a lowbrow and a highbrow offer (1 = not appealing, 7 = very appealing). To make the evaluations relevant, we created two magazine sets corresponding to participants’ genders. Both sets included *The Economist* as the highbrow option. The lowbrow option for female participants was *Cosmopolitan* magazine, a well-known magazine targeting women, whereas male participants saw *Sports Illustrated*.

Next, we measured participants’ perceptions of the efficacy of magazine options for intellectual goals by asking them to rate the extent to which each magazine is (1) fun, (2) playful, (3) entertaining, (4) serious, (5) informative, and (6) highbrow. These questions appeared as 5-star ratings with the option to assign half ratings. Whereas the first three ratings assessed perceptions that a magazine can offer immediate pleasure (fun, playful, entertaining), the last three questions measured perceptions that a magazine can provide long-term benefits in terms of educational or intellectual enrichment (serious, informative, and highbrow). Unlike the evaluative “appeal” ratings used to measure restraint, these efficacy ratings were meant to capture how people describe the magazines.

At the end of the study, after several demographic questions, we asked participants to rank how important is it for them to keep up with each of four types of news and events (1 = most important, 4 = least important): Current events (e.g., world, national, science, business news), Style and Fashion news, Sports news and Pop culture (e.g., celebrity news, music, movies). This ranking question provided our subjective self-control conflict measure. Since *Cosmopolitan* is primarily a pop culture, woman’s magazine, we assumed the highbrow versus lowbrow evaluations would pose a greater conflict for female participants who ranked current events and pop culture or current events and style in their top two. Also, since *Sports Illustrated* is primarily a sport magazine which includes pop culture news, we assumed the highbrow versus lowbrow evaluations would pose a greater conflict for male participants who ranked current events and sports news or current events and pop culture in their top two. This ranking-based categorization allowed us to distinguish between people for whom the decision could pose a subjective self-control conflict ($n = 212$) and those for whom the decision would not pose a self-control conflict ($n = 69$). Indeed, for participants who ranked the relevant type of news in their top two, being presented with valuable goal-consistent and goal-inconsistent options should elicit a self-control conflict. By contrast, for the other participants—who did not rank the relevant type of news in their top two—the decision should not pose a self-control conflict, since one or both options are not particularly valuable to them.

**Results and Discussion**

We note that although the subjective self-control conflict measure was assessed after the respective position manipulations, separated by demographic questions, these manipulations did not affect the measure ($x^2 < 1$). We conducted repeated measures ANOVAs of participants’ appeal ratings on Magazine Type (highbrow vs. lowbrow) $\times$ Position $\times$ Self-Control Conflict $\times$ Gender, with magazine type within-subjects and the other three factors between-subjects. The analysis revealed the predicted three-way interaction of Magazine Type $\times$ Position $\times$ Self-Control Conflict, $F(2, 269) = 4.32, p = .014$. We also obtained a main effect of magazine type, $F(1, 269) = 8.06, p = .005$, an interaction of Magazine Type $\times$ Gender, $F(1, 269) = 11.42, p = .001$, and a marginal interaction of Magazine Type $\times$ Self-Control Conflict $\times$ Gender, $F(1, 269) = 2.99, p = .085$. However there was no interaction of Magazine Type $\times$ Illusory Position $\times$ Self-Control Conflict $\times$ Gender, $F(2, 269) = 1.45, ns$, indicating that assigning different lowbrow magazines to female and male participants had a no influence on the overall pattern of magazine evaluations. We thus report the results across gender/stimuli set.

To explore the interaction of Magazine Type $\times$ Position $\times$ Self-Control Conflict, we first looked at the data from participants who experienced a self-control conflict. As predicted, when the
decision posed a conflict ($n = 212$), the evaluation of lowbrow and highbrow magazines was influenced by position framing (i.e., self-diagnosticity), $F(2, 209) = 3.87, p = .022$. Specifically, participants found the highbrow offer more appealing than the lowbrow offer at the beginning and end as a function of subjective self-control conflict. By contrast, when the decision did not pose a subjective conflict ($n = 69$), the evaluation of highbrow and lowbrow magazines was unaffected by position-framing, $F(2, 66) = 1.77, ns$, as either beginning ($M_{\text{highbrow}} = 3.92, SD = 1.98; M_{\text{lowbrow}} = 4.36, SD = 2.04$), middle ($M_{\text{highbrow}} = 4.71, SD = 1.62; M_{\text{lowbrow}} = 3.57, SD = 2.04$), or end ($M_{\text{highbrow}} = 4.52, SD = 1.86; M_{\text{lowbrow}} = 3.91, SD = 2.37$). These results are displayed in Figure 7.

We find participants for whom the decision posed a self-control conflict evaluated highbrow versus lowbrow magazine-offers more positively at the beginning and end (high self-diagnosticity) than in the middle (low self-diagnosticity), whereas participants for whom the decision did not pose a conflict were unaffected by self-diagnosticity cues. This pattern of judgment is consistent with our prediction about the influence of the desire to maintain a positive self-concept on self-control. Participants who experienced a self-control conflict resolved this conflict in the “right” or self-flattering way in the presence of self-diagnosticity cues (beginning or end). By contrast, participants for whom the decision did not pose a self-control conflict had nothing to prove to themselves in this context, and were thus insensitive to self-diagnosticity cues.

Finally, to assess the extent to which illusory positions might influence perceptions of goal impact we combined participants’ ratings of the extent to which they considered each magazine (a) fun, (b) playful, and (c) entertaining to form two “play” indices ($\alpha_{\text{highbrow}} = .81; \alpha_{\text{lowbrow}} = .85$), and ratings of each magazine as (a) serious, (b) informative, and (c) highbrow into two “learn” indices ($\alpha_{\text{highbrow}} = .81; \alpha_{\text{lowbrow}} = .87$). The correlations between these four measures were low (rs between .037 and .360). The play indices assessed the extent to which a magazine is seen as providing immediate gratification, whereas the learn indices measured the extent to which a magazine is considered beneficial/instrumental for long-term intellectual goals. We conducted repeated measures ANOVAs of the play indices on Magazine Type (highbrow vs. lowbrow) $\times$ Position $\times$ Self-Control Conflict, which revealed only a main effect of magazine type: participants rated the lowbrow option higher on play than the highbrow option ($M_{\text{lowbrow}} = 3.4, SD = 1.12; M_{\text{highbrow}} = 1.84, SD = .91$), $F(1, 275) = 255.39, p < .001$ ($d = 1.53, r = .61$). There were no two-way or three-way interactions ($Fs < 1$).

A similar analysis of the learn indices showed participants rated the lowbrow option lower on learn than the highbrow option ($M_{\text{lowbrow}} = 1.66, SD = 1.13; M_{\text{highbrow}} = 4.14, SD = .83$), $F(1, 275) = 583.28, p < .001$ ($d = -2.5, r = -.78$). Furthermore, an interaction of Magazine Type $\times$ Self-Control Conflict indicated this difference was more pronounced in the presence ($M_{\text{lowbrow}} = 1.61, SD = 1.1; M_{\text{highbrow}} = 4.19, SD = .83$) versus absence ($M_{\text{lowbrow}} = 1.8, SD = 1.22; M_{\text{highbrow}} = 3.98, SD = .89$) of a subjective self-control conflict, $F(1, 275) = 4.33, p = .038$. There was no two-way interaction of Magazine Type $\times$ Position and no three-way interaction of Magazine Type $\times$ Position $\times$ Self-Control Conflict ($Fs < 1$). Thus, participants deemed the highbrow magazine overall more beneficial to intellectual goals. However, as expected, we found no effect of position on ratings of playfulness or learning, indicating illusory position had no influence on perceptions of goal impact for lowbrow or highbrow magazine. This null effect of position on goal impact is consistent with the notion that choices at the beginning and end (vs. middle) promote self-control because they act as self-diagnosticity cues, rather than because they seem more influential to the attainment of intellectual goals.

**General Discussion**

The present article shows the role of the “self” in self-control. Whereas the extant literature has focused on demonstrating that people exercise self-control when they consider the goal outcomes of their actions, we show people also exercise restraint when they consider the self-concept outcomes of their actions. First, we demonstrated greater perceptions of self-diagnosticity for framed beginning and end (vs. middle) positions in constructed sequences (Experiments 1 and 2). Second, using beginning and end (vs. middle) framings as experimental manipulations of self-diagnosticity,
we found participants who value health (Experiments 3 and 5), financial (Experiment 4) and intellectual goals (Experiment 6) were more likely to make judgments and decisions consistent with these goals at the beginning or end (vs. middle). However, participants for whom these goals were less important were unaffected by framed positions (Experiments 4 and 5).

These findings on the moderating role of goal importance further confirmed positions act as self-diagnosticity cues. Indeed, people for whom a goal-related identity is important get more out of self-signaling that identity and are thus more responsive to self-diagnosticity cues such as framed positions. We also show people for whom a goal is important displayed better self-control than those for whom the goal is less important for choices at the beginning or end (high self-diagnosticity). However in the middle (low self-diagnosticity), people for whom the goal is important indulged and splurged as much as others.

Finally, in the context of intellectual goals (Experiment 6), we find that these patterns of behavior occur only when decisions pose a self-control conflict. Participants who experienced a self-control conflict exercised more restraint at the beginning and at the end (vs. middle). However, participants not facing a subjective self-control conflict were unaffected by framed positions. Because these participants did not default to socially desirable judgments, we take these findings as evidence that our observed patterns of results stem from a desire to preserve the private self-concept rather than from public self-presentation concerns.

These findings highlight the importance of the “self” in self-control. Indeed, we show the exercise of self-control is motivated not just by considerations of goal impact but also by the desire to maintain a positive conception of the self as holding and pursuing valued goals (e.g., I am a health-conscious person). Although self-concept maintenance has received less attention in the self-control literature, it can have a powerful influence on self-control: The pleasure from a boost to the self-concept might be as instantaneous as the pleasure from indulging (Prelec & Bodner, 2003). Thus self-concept maintenance might provide an alternative form of instant gratification, which—unlike the instant gratification from indulgence (e.g., Mischel & Ayduk, 2004)—is in the service of long-term interests.

Our results suggest self-concept considerations influence self-control independently from goal-impact considerations and these are two separate drivers of self-control. First, we find no effect of position on perceptions of the efficacy of decision-options for the goal (Experiment 6), as participants deemed choices similarly consequential for their long-term interests at the framed beginning, middle and end. It appears positions influence perceptions of self-control impact without influencing perceptions of goal impact. Second, in our studies, we generally set up choices in ways shown to highlight goal impact. In Experiments 2 and 4, we separated healthy and indulgent foods (e.g., on separate trays, on different sides of the one-page menu; see Fishbach & Zhang, 2008). Experiment 6 went beyond mere presentation and used sets of magazine subscriptions (10 issues), which are more consequential for intellectual goals than a single magazine issue. Overall, the decisions in our experiments should have made long-term goal impact salient for everyone, such that only variations in concerns about the self-concept could account for the observed results. We note, however, that distinguishing between self-concept impact and long-term goal impact may prove challenging. Indeed, choices at the beginning end and, due to their greater self-diagnosticity, might elicit the expectation of consistently making similar types of choices in the future. If a healthy food choice at the beginning or end means “I am health conscious,” the implication is “I will be more likely to make healthy choices in the future,” because health-conscious people, by definition, make healthy choices. Thus beginning and end (vs. middle) framings might indirectly make choices seem more consequential for long-term interests. We leave this open question to future research.

Our results, in particular the findings on the moderating role of goal importance, further suggest that the observed patterns of judgment and decision stem from self-enhancement or self-verification motives (Sedikides, 1993; Swann & Read, 1981), rather than self-assessment motives (Trope, 1986). Indeed, if beginning and end positions increased self-assessment motives, all participants (regardless of goal commitment) should have worked harder to learn about their ability to exercise self-control at the beginning and end (vs. middle).

Our findings also have implications for self-signaling research, which typically assumes the diagnostic value of actions stems from their statistical rarity or difficulty. For example, researchers assume behaviors that are effortful and/or deviate from the norm, such as jogging on a rainy (vs. beautiful) morning, provide stronger self-signals of personal traits and characteristics (in this case, willpower; Bodner & Prelec, 1996). Similarly, choosing healthy foods while facing temptation (vs. in the absence of temptation) is more effortful and thus more indicative of strong willpower (Dhar & Wertenbroch, 2012). In the present research, we hold effort and statistical rarity constant and yet observe more self-signaling for choices implicating the self-concept. In particular, we show factors beyond the objective nature of actions (e.g., mere position framing) can influence the diagnostic value of these actions. It is also possible that individual differences exist in people’s perceptions that actions are self-diagnostic. In particular, future research could investigate whether there is a connection between one’s chronic ability to exercise self-control and the perceived diagnosticity of one’s actions: do successful self-regulators chronically construe actions as self-diagnostic, whereas nonsuccessful regulators habitually detach themselves from their actions?

Finally, on a practical note, our findings suggest educators, parents, managers, and public policymakers could promote greater adherence to important goals by triggering concerns about the self-concept. Indeed, appealing to a person’s desire to think of herself in positive terms proves to be a powerful motivator in the arduous pursuit of long-term goals. Although the current research focused on health, financial, and intellectual goals, we expect the perceived self-diagnosticity of choices to matter in any self-relevant decision-context posing a direct or indirect trade-off between long-term interests and short-term desires.

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