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In Good Company: Managing Interpersonal Resources That Support Self-Regulation

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Abstract

Effective self-regulation could involve not only managing internal resources for goal pursuit but also the often-fleeting interpersonal resources that can support goal attainment. In five studies, we test whether people who are effective self-regulators tend to position themselves in social environments that best afford self-regulatory success. Results indicated individual differences in self-regulatory effectiveness predict stronger preferences to spend time with, collaborate with, and be informed by others who were (a) high in self-control or self-regulation themselves or (b) instrumental to one's goal pursuit. These preferences for supportive social environments appeared to be both targeted and strategic. Together, the findings suggest that effective self-regulation may involve positioning oneself in social environments that support goal pursuit and increase one's chances of success.

Keywords

self-regulation, self-control, interpersonal relationships

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The key is to keep company only with people who uplift you,
whose presence calls forth your best.

—Epictetus

Goal pursuit is tough. Research has consistently highlighted just how challenging self-regulation can be. Indeed, the process of goal pursuit often involves a great deal of time, effort, and energy to overcome temptations and obstacles (Baumeister, Bratslavsky, Muraven, & Tice, 1998; Hagger, Wood, Stiff, & Chatzisarantis, 2010; Hofmann, Vohs, & Baumeister, 2012). Even people who are effective at pursuing their goals may face an array of temptations, obstacles, or other situations that strain their limited material and psychological resources along the way. Why are they still able to make progress and how do they do it? Are effective self-regulators better at single-handedly toiling through their goal pursuits—repeatedly pulling themselves up by their bootstraps to override temptations, initiate goal-directed action, and persist through challenges? Or do they simply have more psychological resources than less successful others? Perhaps, but we will test an alternative—and largely unexplored—explanation: that effective self-regulators are more likely to take advantage of the social resources they have around them.

We draw from a definition of self-regulation as a process that “targets one’s own cognitions, affects, and actions, *as well as features of the environment* . . . in the service of one’s goals” (Boekaerts, Maes, & Karoly, 2005, emphasis added, p. 150). Our analysis assumes that just as people may differ

in the strategic management of their *internal* resources (e.g., willpower, motivation), people may accordingly differ in the strategic management of their *external* resources (e.g., social environments, situational affordances). Given recent work suggesting that self-regulation extends to interpersonal processes (Fitzsimons & Finkel, 2011; Fitzsimons & Shah, 2008), we posit that effective self-regulators marshal interpersonal resources to ease the ongoing burdens of self-regulation—that is, they look beyond themselves to consider the affordances of their social environment for goal pursuit. We test the theory that effective self-regulators strive to position themselves in better social environments and do so to a greater extent than less effective self-regulators do.

Strategic Preparation for Self-Regulation

Researchers increasingly recognize goal pursuit involves not only reacting to constraints and affordances as they arise but also anticipating them. Effective self-regulation involves

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proactively ensuring one is in the right place at the right time and with enough resources to effectively respond to those situations (e.g., Gollwitzer, 1993; Moskowitz & Li, 2011; Scholer & Higgins, 2010). These proactive strategies could involve planning for a specific situation (Gollwitzer, 1993; Webb & Sheeran, 2003) or revising one's perceptions of situations and temptations (e.g., downplaying a temptation's appeal, distracting oneself from tempting features of a temptation; Fishbach, Zhang, & Trope, 2010; W. Mischel, Ebbesen, & Raskoff Zeiss, 1972; H. N. Mischel & Mischel, 1983; Myrseth, Fishbach, & Trope, 2009).

Yet effective self-regulation might involve even broader, more diffuse social strategies. To complement direct strategies such as actively setting implementation intentions (which facilitate goal pursuit) or construing temptations more abstractly (to better overcome them), we pursuers may also employ more environmentally focused strategies designed to position themselves in optimally supportive environments. Although interpersonal processes are now frequently discussed with regard to self-regulation (see Fitzsimons & Finkel, 2010; Vohs & Finkel, 2006), it is still unclear whether effective self-regulation involves changes in preferences for specific sources of goal support. Just as effective self-regulators are probably apt to approach goal-supportive and avoid goal-unsupportive environments (Fishbach & Shah, 2006) and to preemptively manage their exposure to temptations (Hofmann, Baumeister, Förster, & Vohs, 2012; Imhoff, Schmidt, & Gerstenberg, 2014), successful self-regulators may similarly manage the support they receive for goal support from others.

We propose that effective self-regulation involves more than simply rising to meet the challenge of temptations and obstacles as they are encountered; it also involves positioning oneself in social environments that make it easier to pursue goals and resist temptations in the first place. In the present work, we examine how effective self-regulators position themselves among people who might facilitate or hinder self-regulation.

How Do Others Potentially Support Self-Regulation?

Past work suggests at least four theoretical reasons why social environments may affect self-regulation—and thus why effective self-regulators may seek to manage them. First, salient others serve as exemplars for goal pursuit and people tend to pursue the goals being pursued by salient and/or close others (Aarts, Gollwitzer, & Hassin, 2004; Dijk & Aarts, 2007; Fitzsimons & Bargh, 2003; Shah, 2003). Second, others inspire self-regulation through demonstration of successful goal pursuit; when similar success is attainable, people often experience greater success at such goal pursuits themselves (Ackerman, Goldstein, Shapiro, & Bargh, 2009; Lockwood & Kunda, 1997; vanDellen & Hoyle, 2010). Others' success also increases one's confidence about

success (S. C. Jones & Regan, 1974; Kulik, Mahler, & Moore, 1996; Martin, Suls, & Wheeler, 2002). Third, consistent with social learning theory (Bandura, 1977), people often learn from observing the actions of others. Others may, for instance, offer strategies for achievement or techniques for delaying gratification (Butler, 1992; Lockwood & Kunda, 1997; Romer, Duckworth, Sznitman, & Park, 2010; Schunk & Zimmerman, 2008). Transmitting information relevant to goal pursuit represents another way that others facilitate self-regulation. Finally, others may actively contribute to goal pursuit. People must often collaborate with others to achieve important outcomes (Finkel et al., 2006; Rusbult & Arriaga, 1997; Steiner, 1972). Others with high self-control are often trusted and relied on for help (Koval, vanDellen, Fitzsimons, & Ranby, in press; Righetti & Finkenauer, 2011). When others contribute to a joint outcome (e.g., Fitzsimons & Finkel, 2011), it could ease the burden an individual feels toward goal pursuit and thus support self-regulation.

Present Research

In the present research, we explored a theory of *social positioning*, expecting effective self-regulators (e.g., people with strong self-control or self-regulation skills) to more effectively position themselves around others who support self-regulation while avoiding others who might interfere with self-regulation. We additionally examined how such social positioning may manifest perceptually and strategically by testing three hypotheses aimed at understanding dynamics behind these expected preferences for supportive social environments. First, we examined a *perceptual sensitivity* hypothesis—asking whether effective self-regulators better detect self-control in others (Studies 1 and 2) or are simply more sensitive to others' goal-directed motivation (Study 5). Second, we examined a *targeted support-seeking* hypothesis—asking whether effective self-regulators simply seek more support from anyone or whether they focus their searches for help from specific people. Third, we examined a *strategic positioning* hypothesis—expecting these stronger preferences to emerge strategically rather than incidentally (e.g., because of greater liking or similarity to others). Our social positioning theory predicts that effective self-regulators are better at detecting and identifying others who might support self-regulation and that their searches are both *targeted* at supportive versus unsupportive sources and are *strategic* rather than incidental. In other words, effective self-regulators choose to pursue goals with the right people by their side.

We operationalized self-regulatory effectiveness as high trait self-control or self-regulation and preference for social environments that promote self-regulation as both approaching supportive environments and avoiding unsupportive environments. Thus, whether it is about strengthening connections with the right people or minimizing connections with the wrong people, we expected individuals—particularly effective

self-regulators—to position themselves in social environments most likely to promote their own self-regulation.

Study 1

In Study 1, we examined whether effective self-regulators have stronger preferences to spend time with others who might support self-regulation. In addition, we tested the *perceptual sensitivity* hypothesis by examining evaluations of other's self-control. If preferences were driven by greater sensitivity to self-control in others, we might expect to see effective self-regulators recognize the high (or low) self-control in others to a greater degree than less effective self-regulators. Although we expected all participants to evaluate others with high (vs. low) self-control positively (W. Mischel, Shoda, & Peake, 1988; Righetti & Finkenauer, 2011; Tangney, Baumeister, & Boone, 2004), participants who themselves have high self-control may be especially sensitive to others' self-control and thus show a larger spread in desire to interact with others with high versus low self-control.

Thus, in the present study we asked participants to report on two key variables: assessments of others' self-control and desire to interact with others. We operationalized effective self-regulation as trait self-control. Measures of self-control, including the Brief Self-Control Scale (BSCS; Tangney et al., 2004), ask participants about their tendencies toward successful goal pursuit. Moreover, recent research suggests that measures of self-control—despite being thought of as measuring specifically self-control—pick up on a broader range of self-regulatory skills (Boals, vanDellen, & Banks, 2011; Hofmann, Baumeister, et al., 2012; Hofmann, Luhmann, Fisher, Vohs, & Baumeister, 2014; Schmeichel & Zell, 2007). Thus, although the scale does not directly assess goal outcomes, high scores on it correspond with self-regulatory effectiveness. We operationalized supportive others as individuals with relatively high versus low self-control.

Method

Participants. Undergraduate students from a large American university ($N = 99$; 81.8% female) earned class credit for participation. Data from 5 additional participants were excluded due to failure to follow instructions.

Procedure. On private computers in a research laboratory, participants first answered demographic questions and completed the 13-item BSCS (Tangney et al., 2004; $M = 3.30$, $SD = 0.64$, $\alpha = .85$). Next, participants were randomly assigned to describe someone they had recently met whom they judged to have high or low self-control. Participants then evaluated the self-control of the target and, with 4 items, reported their preferences for continued social interaction with the person ($\alpha = .92$) using the scale 1 (*strongly disagree*) to 5 (*strongly agree*). Study materials are presented in the online appendix.

Figure 1. Interaction between participant self-control and target self-control predicts target ratings, Study 1.

Results and Discussion

Manipulation check. Compared with the scale midpoint of 3, participants assigned to write about a high self-control target indicated the target had good self-control ($M = 4.56$, $SD = 0.54$), $t(46) = 19.52$, $p < .001$, and participants assigned to write about a low self-control target indicated the target had low self-control ($M = 4.10$, $SD = 0.81$), $t(49) = 9.55$, $p < .001$.

Social positioning. We used moderated multiple regression to evaluate the effect of participant self-control on desire to interact with targets. Target self-control was dummy coded and participant trait self-control was standardized prior to analysis. Participants wanted to spend more time with targets high (vs. low) in self-control, $B = 1.61$ (95% confidence interval [CI] = [1.28, 1.95]), $t(92) = 9.55$, $p < .001$, $d = 1.99$. In addition, participants with higher (vs. lower) self-control wanted to spend less time with either target, $B = -0.28$ (95% CI = [-0.55, -0.00]), $t(92) = -2.01$, $p = .047$, $d = -0.42$. As predicted, an interaction between participant self-control and target self-control emerged, $B = 0.37$, $t(92) = 2.12$, $p = .037$, $d = 0.44$. We plotted the interaction at one SD above and below the mean on trait self-control (Cohen, Cohen, West, & Aiken, 2003). As Figure 1 shows, participants with high self-control demonstrated stronger preferences for high versus low self-control targets, $B = 1.92$ (95% CI = [1.50, 2.46]), $t(92) = 8.22$, $p < .001$, $d = 1.71$, than did participants with low self-control, $B = 1.24$ (95% CI = [0.76, 1.73]), $t(92) = 5.08$, $p < .001$, $d = 1.06$.

Perceptual sensitivity. Participants evaluated the self-control of the targets similarly regardless of their own self-control; that is, participant self-control did not predict perceptions of target self-control for either high, $B = 0.07$ (95% CI = [-0.15, 0.29]), $t(44) = 0.64$, $p = .524$, or low self-control targets, $B = 0.30$ (95% CI = [-0.13, 0.72]), $t(48) = 1.41$, $p = .164$. Because participants nominated the targets, it is possible that they actually nominated targets that differed on self-control but evaluated them similarly. However, this preliminary examination of the

perceptual sensitivity hypothesis suggests the stronger preferences of effective self-regulators may have more to do with using the information they learn about others rather than in perceiving others differently.

Summary. Supporting past research, targets with good self-control were preferred by all participants. As expected, preferences to interact with others with high (vs. low) self-control were larger among participants who reported more effectiveness at self-regulation. Thus, one way people with high self-control may maintain effective self-regulation is by keeping the right people in—and the wrong people out—of their social environment. Participants' own self-regulation did not predict ratings of others' self-control, suggesting that these preferences may not be due to differences in *perceptual sensitivity* among effective self-regulators.

Study 2

Study 1 examined general social positioning—preferences to become better friends with people high versus low in self-control. Although such positioning may be adaptive for self-regulation—as it can be difficult to predict when or where self-regulatory demands may arise—the utility of such positioning may depend on an individuals' current goal pursuits. Thus, in Study 2, we investigated preferences to work with others on a specific anticipated self-regulatory challenge. In addition, although Study 1 provided external validity, in Study 2, we used a standardized laboratory paradigm to ensure the self-regulatory effectiveness of potential collaboration partners was held constant across participants. Thus, Study 2 provides a more stringent test of the *perceptual sensitivity* hypothesis. In addition, in Study 2, we conduct a preliminary test of the *strategic positioning* hypothesis by asking participants how much they like each potential collaboration partner. We again operationalized self-regulatory effectiveness as trait self-control.

Method

Participants. Participants were 100 undergraduate students (82% female) from a large American university who received credit toward a research requirement. An additional 7 participants were excluded from analyses due to procedural problems (e.g., a confederate did not show up, a participant arrived early and saw confederates).

Procedure. Each session involved one participant and two confederates. One confederate (Taylor) arrived prior to the participant so as to appear prompt. The second confederate (Alex) hid in a nearby classroom and was notified by text message to arrive after the participant's arrival so as to appear relatively tardy. Participants and confederates wore name tags made for them on arrival throughout the study.

The experimenter began by explaining to the group that they would complete measures on a computer, have a group

discussion, and finally return to the computer to work on either an individual or group task. Shortly after the participants completed the questionnaires, including the 13-item BSCS (Tangney et al., 2004; $M = 3.42$, $SD = 0.59$, $\alpha = .81$), the experimenter asked the group to bring their chairs into a semicircle for a discussion. The experimenter proceeded to ask the group questions about where they were from, their major, what they like to do in their spare time, and how they had spent a recent break from school. The confederates followed a memorized script such that Taylor appeared high in self-control, whereas Alex appeared low in self-control (see the online appendix).

After the discussion, participants were redirected to their computers. They evaluated the confederates' likeability (i.e., extraverted, agreeable, angry, friendly) and self-control (i.e., disciplined, motivated, lazy, impulsive). Next, participants were told they would complete a task requiring self-control with one of the other participants (see the online appendix for full instructions). Participants completed three trials to familiarize themselves with the task. Thus, in addition to describing the task as requiring effort, participants learned that earning points in the task involved unpleasant delays. Participants were given an incentive by insinuating they would do a taste test of either an appealing or unappealing food based on their group's performance. Participants then rated each confederate in terms of how much they would want to work with him or her on the task on a scale from 1 (*not at all*) to 5 (*very much*) and selected a collaborator. Following their selection, the study was terminated.

Results and Discussion

Manipulation check. We used mixed models treating target self-control (low vs. high) as a within-subjects factor and participant self-control as a between-subjects factor. Taylor was evaluated as having more self-control than Alex, $F(1, 98) = 398.91$, $p < .001$, $d = 4.04$. Taylor was viewed as equally likeable as Alex, $F(1, 98) = 0.86$, $p = .355$, $d = 0.19$.

Social positioning. Desire to work with Taylor (vs. Alex) and choice of partner were strongly correlated ($r = .60$) and so we began by examining the effect of participant self-control on a composite reflecting the magnitude of preference for Taylor (vs. Alex) and the collaborator choice. Higher self-control led to stronger preferences for Taylor, $B = 0.19$ (95% CI = [0.01, 0.37]), $t(98) = 2.05$, $p = .043$, $d = 0.41$. Separate analyses revealed this pattern was similar for each variable in the composite. A marginally significant interaction between target and participant trait self-control predicted ratings of desire to work with each target, $F(1, 98) = 3.00$, $p = .086$, $d = 0.35$ (see Figure 2). As in Study 1, the interaction indicated greater preferences for Taylor among participants with high self-control, $F(1, 98) = 16.35$, $p < .001$, $d = 0.82$, but nonsignificant preferences for Taylor among participants with low self-control, $F(1, 98) = 2.60$, $p = .11$, $d = 0.33$.

Figure 2. Interaction between participant self-control and target self-regulation, Study 2.

Logistic regression analyses predicting collaborator choice indicated a marginally significant effect such that participants were somewhat more likely to select to work with Taylor to the extent that they reported higher trait self-control, $B = .44$, Wald $\chi^2 = 3.38$, $p = .066$, odds ratio (OR) = 1.22.

Perceptual sensitivity. To test whether preferences might be due to differences in perceptual sensitivity, we examined whether ratings of target self-control differed by participant self-control. No main effect of participant self-control emerged indicating that, across targets, participants perceived the same amount of self-control. Furthermore, participant trait self-control did not interact with target self-control, $F(1, 98) = 0.96$, $p = .330$, $d = 0.20$. That is, Taylor was perceived as having greater self-control than Alex regardless of the extent to which the participant was high or low in self-control.

Strategic positioning. To examine whether preferences of effective self-regulators might be due to incidental factors, such as natural liking for people similar to themselves, we examined whether participants' self-control moderated evaluations of targets' likeability. A marginally significant effect emerged such that participants with high self-control tended to like both targets more than did participants with relatively low self-control, $F(1, 98) = 3.27$, $p = .074$, $d = 0.37$; participant self-control and target self-control did not interact to predict likeability ratings, $F(1, 98) = 1.02$, $p = .316$, $d = 0.20$. Because participants liked Taylor and Alex equally regardless of their own level of self-control, this preliminary test suggests that social positioning is likely *targeted* rather than incidental.

Summary. In the context of a controlled laboratory experiment, we again saw evidence of social positioning; participants showed stronger preferences for Taylor over Alex to the extent that they were high in self-control. We will return to this idea in Study 5, wherein we tested whether perceptual sensitivity might be more about detecting others' goal-directed

motivation than their general self-control abilities. We again saw little evidence to support a *perceptual sensitivity* hypothesis; participants being equally likely to evaluate Taylor as more self-controlled than Alex regardless of their own self-control. Finally, the results provide preliminary evidence for a *targeted positioning* hypothesis with participants finding Taylor and Alex equally likeable regardless of their own self-control. Rather than incidentally choosing to work with people they liked more, effective self-regulators may be positioning themselves strategically, positioning themselves with others who support self-regulation. These results replicate the results of Study 1 in the context of selection of a collaborator for a task that would require self-control from both the participant and the collaborator.

Study 3

Studies 1 and 2 found effective self-regulators to have stronger preferences for others with high self-control as general members of their social network (Study 1) and as collaborators on a self-control task (Study 2). In each of these paradigms, and particularly in Study 2, participants could feasibly rely on the target's performance and/or help rather than engage in their own goal pursuit. However, environments may be considered as supportive even when the individuals involved do not share interest in the outcome of the goal pursuit. To examine this potential, in Study 3, we instead examined a task on which participants would be entirely responsible for the outcome. In addition, in Study 3, we provide a test of the *targeted support-seeking* hypothesis by asking participants to report how useful various forms of support would be. If effective self-regulators engage in targeted (rather than general) support-seeking, we should see that they do not show an overall interest in support but that they funnel that interest in support toward the sources most likely to provide useful support.

We made two additional changes in Study 3 to help further understand social positioning. First, the previous studies were not specific about how social environments might support self-regulation. In Study 2, support likely involved a combination of inspiration (e.g., if I work with Taylor, I will be motivated to try harder) and collaboration (e.g., if I work with Taylor, he or she will earn more points so that we will perform better as a team). In Study 3, we investigated specific forms of support: receiving advice or learning how others had performed on a similar task. In addition, whereas Studies 1 and 2 assessed self-regulatory effectiveness using a measure of trait self-control, in Study 3, we used the Self-Regulation Questionnaire (Brown, Miller, & Lawendowski, 1999). Because self-regulatory effectiveness likely involves more than just self-control (Mann, de Ridder, & Fujita, 2013), using an alternative measure allows us to verify that the effects observed in Studies 1 and 2 were not due to defining self-regulatory effectiveness as trait self-control.

Method

Participants. Participants ($N = 63$, 50, 70% female) ranging in age from 20 to 68 completed the study through Amazon's MTurk.

Procedure. Participants were told that as part of a survey on personality and motivation they would complete a pair of word search tasks in which they would be asked to find words in a presented grid of letters. Following completion of the first word search, participants were asked how useful they thought different types of information would be as they prepared to complete a second word search task. Participants made separate ratings of two types of information (advice, scores) from each type of two sources (others described as high or low self-regulators) using a sliding percentile scale that ranged from 0% likelihood to 100% likelihood. Thus, participants made four ratings in total. Rather than providing descriptions of such high and low self-regulators, we simply used the phrasing "high self-regulator" and "low self-regulator" to describe the potential sources of information.

Participants then completed the second word search task before completing the short version of the Self-Regulation Questionnaire (Brown et al., 1999). Example items include, "I usually keep track of my progress toward my goals," and "I don't notice the effects of my actions until it's too late." Responses were provided on a scale from 1 (*strongly disagree*) to 9 (*strongly agree*). After reverse scoring appropriate items, responses were summed to form a single value for each participant ($M = 6.00$; $SD = 1.44$, $\alpha = .88$). Participant self-regulation scores were correlated with their performance on both the first ($r = .37$, $p = .002$) and second ($r = .26$, $p = .042$) word search tasks. Thus, consistent with past research, this task likely represented an opportunity for individual self-regulation (e.g., Bargh, Gollwitzer, Lee-Chai, Barndollar, & Trötschel, 2001; Ferguson, 2008).

Results and Discussion

Social positioning. As in Study 2, we examined usefulness ratings of the information using a mixed model where target (high vs. low self-regulator) was a within-person variable and participants' trait self-regulation was a continuous between-subjects variable, analyzing usefulness ratings for advice and scores separately. Information from high self-regulators ($M_{\text{advice}} = 69.5$; $M_{\text{scores}} = 70.6$) was rated as more likely to be useful than information from low self-regulators, ($M_{\text{advice}} = 43.4$; $M_{\text{scores}} = 45.2$), $F_{\text{advice}}(1, 61) = 45.82$, $p < .001$, $d = 1.73$; $F_{\text{scores}}(1, 61) = 38.00$, $p < .001$, $d = 1.58$. Consistent with the results of Studies 1 and 2, we observed interactions between participant self-regulation and target self-regulation on usefulness ratings, $F_{\text{advice}}(1, 61) = 16.96$, $p < .001$, $d = 1.06$; $F_{\text{scores}}(1, 61) = 9.21$, $p = .004$, $d = 0.78$. As Figures 3 and 4 show, participants high in trait self-regulation preferred information from high (vs. low) self-regulators,

Figure 3. Interaction between participant self-regulation and target self-regulation predicts ratings of the usefulness of learning the target's scores, Study 3.

Figure 4. Interaction between participant self-regulation and target self-regulation predicts ratings of the usefulness of receiving tips from the target, Study 3.

$F_{\text{advice}}(1, 61) = 59.15$, $p < .001$, $d = 1.97$; $F_{\text{scores}}(1, 61) = 42.19$, $p < .001$, $d = 1.66$, to a greater degree than did participants low in trait self-regulation, $F_{\text{advice}}(1, 61) = 3.40$, $p = .070$, $d = 0.47$ (a marginally significant effect); $F_{\text{scores}}(1, 61) = 4.79$, $p < .001$, $d = 0.56$.

Targeted support-seeking. As a test of the *targeted support-seeking* hypothesis, we sought to rule out that trait self-regulation predicted ratings of usefulness generally. Results indicate that trait self-regulation did not predict combined ratings of usefulness of either advice (i.e., from both the high and the low self-regulator), $F(1, 61) = 1.54$, $p = .219$, $d = 0.32$, or scores, $F(1, 61) = 1.42$, $p = .239$, $d = 0.31$. Effective self-regulators were targeting the right sources of support rather than looking for support in general.

Summary. Again, we observed stronger preferences for supportive others among effective self-regulators, this time in a situation in which participants would be individually responsible for their performance. Stronger preferences of effective self-regulators emerged across two kinds of support (advice, performance scores). Furthermore, the study suggests the

social preferences of effective self-regulators are *targeted*—they have more to do with looking to the right sources of support than with looking for support in general. That is, effective self-regulation was not associated with evaluating all support as useful but rather with perceiving support from high self-regulators as more useful than support from low self-regulators.

Combined with Study 2, this study suggests that effective self-regulators show stronger preferences for support from others than less effective self-regulators in at least three ways: (a) They prefer to work with others who might contribute more to their team's output, (b) they prefer to receive advice from effective self-regulators for an upcoming task, and (c) they prefer to know how effective others have performed on a task they are preparing to complete.

Study 4

Studies 1 through 3 examined social positioning by testing the *perceptual sensitivity* and *targeted support-seeking* hypotheses. In Study 4, we test the *strategic positioning* hypothesis by investigating whether effective self-regulators position themselves only when they experience a goal-related need. To test this hypothesis, we shifted our focus to social positioning in the context of one specific and ongoing goal pursuit and assessed participants' reports of confidence related to goal pursuit. We expected participants high in self-regulatory effectiveness to prefer supportive others only when they felt low in confidence about the goal—in other words, then they might have a particular incentive to look for help. In addition, we took our research out of the lab to investigate evaluations of friends reported to be helpful or unhelpful with a real-world goal pursuit of participants—namely, their performance in an undergraduate statistics class. We operationalized self-regulatory effectiveness using a measure of trait self-control.

Method

Participants. Participants were students enrolled in an undergraduate statistics course in a psychology department who received extra credit in the course in exchange for participation in a survey; 45 students (of 54 enrolled) chose to participate and provided complete data.

Procedure. Participants nominated a friend they expected would have a positive effect on their success in the course and a friend they expected would have a negative effect on their success in the course. Instructions for nominating an instrumental other (i.e., positive effect) and an antagoal other (i.e., negative effect) were based on previous research (Fitzsimons & Fishbach, 2010). Participants completed a four-item version of the BSCS (Tangney et al., 2004) on a 1 (*not like me*) to 7 (*very much like me*) scale, $\alpha = .84$. In addition, participants indicated their agreement with the item, “I am

Figure 5. Interaction between participant self-control and target helpfulness on friend ratings when participant nervousness is low, Study 4.

nervous about whether I will earn a good grade in [this class],” on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*). Finally, based on previous research (Fitzsimons & Fishbach, 2010), participants answered a series of questions about the instrumental and antagoal friends they had nominated (see the online appendix). Indexes were combined to create two ratings, one of the instrumental other ($\alpha = .80$) and one of the antagoal other ($\alpha = .93$).

Results and Discussion

As in previous studies, we used a mixed model predicting ratings of each friend from trait self-control (a continuous between-subjects variable) and target (instrumental vs. antagoal; a categorical within-subjects variable). To examine the *strategic positioning* hypothesis, we examined whether their nerves about the course (a continuous between-subjects variable) moderated the previously observed pattern. Consistent with our earlier studies, participants generally preferred instrumental over antagoal friends, $F(1, 41) = 14.43$, $p < .001$, $d = 1.19$. In addition, we observed an interaction between participant self-control, target helpfulness, and participant nervousness on participants' ratings of their friends, $F(1, 41) = 7.13$, $p = .011$, $d = 0.83$. As Figures 5 and 6 show, a two-way interaction between participant self-control and target helpfulness was observed at high levels of nervousness, $F(1, 41) = 7.07$, $p = .011$, $d = 0.83$, but not at low levels of nervousness, $F(1, 41) = 1.09$, $p = .303$, $d = 0.33$. Only at high levels of nervousness did we observe the same pattern found in Studies 1 through 3 with preferences for the instrumental friend being larger among participants with high self-control, $F(1, 41) = 17.71$, $p < .001$, $d = 1.31$, than among participants with low self-control, $F(1, 41) = 0.31$, $p = .580$, $d = 0.17$.

Study 4 examined real-world evaluations of supportive and unsupportive friends nominated by the participants. The results of the study confirm the results of Studies 1 through 3, but only when participants were nervous about their

Figure 6. Interaction between participant self-control and target helpfulness on friend ratings when participant nervousness is high, Study 4.

performance in the course. That is, when high self-control participants were worried about their performance in the class, they more positively evaluated their helpful versus unhelpful friends. When high self-control participants were not worried about their performance in the class, they evaluated their helpful and unhelpful friends similarly. Thus, effective self-regulators are sensitive to their own changing self-regulatory needs, supporting the notion that social positioning may be strategic rather than merely an incidental benefit of having high self-control.

Study 5

In Study 4, we investigated the *strategic positioning* hypothesis by examining differences in social positioning during times of low versus high confidence in goal pursuit. In Study 5, we tested the *strategic positioning* hypothesis in two ways. First, we examined task-specific motivation as a mediating mechanism of the observed social positioning effects. If stronger preferences were related to personal motivation, it might suggest that the preferences are strategic. Second, we examined perceived similarity to potential collaborators. Although Study 2 suggested that liking was not driving the observed effects, similarity to others may operate as liking (Byrne, 1961) in producing incidental—rather than self-regulatory—reasons for effective self-regulators to prefer supportive help to a greater degree than less effective self-regulators. If similarity—and not personal motivation—explained the preferences, we would fail to find support for the *strategic positioning* hypothesis.

In addition, in Study 5, we tested the *perceptual sensitivity* hypothesis. One possible reason Studies 1 and 2 failed to support the *perceptual sensitivity* hypothesis is because we assessed participants' perceptions of self-control in others. Instead, it is possible that sensitivity involves not merely recognizing self-control in others but also seeing how that self-control produces task-specific motivation. Thus, in Study 5, we measured perceptions of others' task-specific motivation.

By measuring perceptions of others' motivations, we were additionally able to examine whether individuals' were projecting their own motivation onto others (e.g., Kawada, Oettingen, Gollwitzer, & Bargh, 2004).

A final aim of Study 5 was to experimentally examine the degree to which preferences might vary across situations of high versus low outcome interdependence. Studies 1 through 4 suggest the preferences of effective (vs. ineffective) self-regulators emerge across many situations, including low (Study 3), moderate (Studies 1 and 4), and high (Study 2) outcome interdependence. In Study 5, we explicitly compared the preferences of effective and ineffective self-regulators in situations of high and low interdependence of goal pursuit. Based on the results of the previous studies, we expected effective self-regulators to be sensitive to opportunities to receive help (i.e., high self-control others provide more help than low self-control others) than to outcome interdependence.

Method

Participants. Undergraduate students from a large American university ($N = 206$; 78% female) participated in exchange for class credit. Data from an additional 9 participants were excluded from analyses because of failure to follow instructions.

Procedure. Participants reported to the lab in groups of three to six. After answering demographic questions, participants completed the BSCS ($M = 3.45$, $SD = 0.58$, $\alpha = .82$). Next, participants wrote a brief text introducing themselves to other participants. Participants were asked to generally describe themselves and received suggestions to talk about their year in school, major, extracurricular activities, and hobbies. After writing their introductory essay, participants were told they would read essays from two other participants and choose one person to work with on a subsequent task.

All participants viewed the same two essays designed to represent one individual likely to have high self-control and another likely to have average self-control (for the full text of the essays, see the online appendix). They were told they would be completing a point-earning task (as in Study 2) and that their points would be combined with the points earned by the person with whom they chose to work. Participants were also told that they would be entered to win a US\$5 gift card based on their total combined points. After reading the essays, participants were asked to indicate, using a 1 (*strongly disagree*) to 5 (*strongly agree*) scale, their agreement with statements indicating that they would want to work with each target on the next task, that they were motivated to complete the next task, that each target was motivated to complete the next task, and that they felt similar to each of the targets. Finally, they made a choice to indicate which person they would prefer as a partner.

In addition to these general procedures, participants were assigned to one of three conditions in which the points on the

Figure 7. Interaction between participant self-control and target self-control, Study 5.

task would come equally from both workers or would be weighted by either the participant's or the collaborator's efforts (for full description, please see the online appendix). In this way, we manipulated the degree to which the outcome depended on the contribution of the participant or of the partner.

Results and Discussion

Social positioning. We used a mixed model, treating trait self-control as a continuous between-subjects variable, experimental condition (equally weighted, participant-weighted, partner-weighted) as a categorical between-subjects variable, and target (good self-control vs. average self-control) as a categorical within-subjects variable to predict target preferences. We observed an interaction between participant trait self-control and target self-control, $F(1, 200) = 14.52$, $p = .0002$, $d = 0.54$ (see Figure 7), such that preferences for the target with good (vs. average) self-control were larger among participants with high self-control, $F(1, 204) = 169.23$, $p < .001$, $d = 1.83$, than they were among participants with low self-control, $F(1, 204) = 58.62$, $p < .001$, $d = 1.08$. Experimental condition did not moderate the interaction between participant self-control and target self-control, $F(2, 200) = 0.80$, $p = .45$, suggesting these stronger preferences for more self-controlled targets emerged regardless of the degree to which the outcome depended on the contribution of the participant versus the partner.¹

We additionally examined the effect of participant self-control and condition on choice of partner using logistic regression. The effect of participant self-control on choice of partner was in the expected direction such that participants with high levels of self-control were more likely to select the good (vs. average) partner, but did not reach statistical significance, Wald $\chi^2 = 2.30$, $p = .13$.

Perceptual sensitivity. Using the same mixed model, we examined participants' evaluations of others' motivation for the

task. Participants perceived the target with high self-control to be more motivated for the subsequent task than the participant with average self-control, $F(1, 204) = 4.63$, $p = .033$. As with preferences, this effect was qualified by an interaction with participant trait self-control, $F(1, 204) = 9.46$, $p = .002$. That is, although all participants tended to view the high self-control target as more motivated than the target with average self-control, participants with high self-control viewed the high self-control target as more motivated than the average target to a greater degree than did participants with low self-control. These differences in perception of target's motivation are consistent with the notion that effective self-regulators are more sensitive to the potential resources that their social environments may provide; they perceived motivation in others, but only selectively, so that only individuals likely to actually be more motivated were perceived as more motivated.

Strategic positioning. If social positioning were strategic, we would expect to see task motivation differ across participants' self-regulatory effectiveness. Furthermore, we might see participants project their motivation onto others. Such projections may involve seeing all potential collaborators as more motivated (potentially reflective of a general support-seeking strategy) or seeing only potentially helpful collaborators as more motivated (potentially reflective of a targeted support-seeking strategy).

Participant self-control predicted reports of own motivation for the task, $\beta = 0.32$, $t(204) = 4.91$, $p < .001$. Participant self-control was positively but marginally associated with perceptions of similarity to both targets, $F(1, 204) = 3.21$, $p = .075$, and participants tended to rate the target with good self-control as more similar to themselves than the target with average self-control, $F(1, 204) = 8.49$, $p = .004$. These effects were qualified by an interaction between participant self-control and target, $F(1, 204) = 15.22$, $p < .001$. Although all participants felt more similar to the participant with good self-control, participants with high trait self-control showed a greater spread in felt similarity to the targets. Thus, participants projected their own states onto the states of others, but did so in a targeted way—Participants with high self-control saw the target with good self-control as more motivated than the target with average self-control to a greater degree than participants with low self-control. Importantly, because task-specific motivation differed across self-regulatory effectiveness, the results support the *strategic positioning* hypothesis. We further investigated the viability of this hypothesis using sequential mediation.

Mediational analyses. We used the PROCESS macro (Hayes, 2013) in SAS to examine sequential mediation. Specifically, we examined the model depicted in Figure 8, where trait self-control predicts personal motivation, which predicts perception of motivation in others, which predicts perception of similarity to others, which ultimately predicts preferences for partner. For variables in which there were ratings of

Figure 8. Sequential mediation model tested in Study 5.

both targets, we modeled difference scores representing the difference between ratings of the target with good self-control versus the target with average self-control. These difference scores reflect the magnitude of perceptual difference between targets or preference for targets.

When examining sequential mediation, the PROCESS macro analyzes all possible pathways through the mediators (keeping them in the order specified). First, we examined the sequential mediational model on preferences to work with each target, finding a significant indirect effect using the full sequential model (i.e., using all variables shown in Figure 8), effect = 0.035, 95% CI = [0.0004, 0.1010]. Removing any of the variables from the sequential model worsened the fit of the model and produced effects whose confidence intervals included 0. Thus, the sequential model including personal motivation, projected motivation, and perception of similarity to targets provided the best fit. Next, we examined how the sequential mediational model predicted choice of partner. Again, the full sequential mediational model produced a significant indirect effect of 0.16, 95% CI = [0.066, 0.349]. And again, removing variables from the sequence did not improve model fit. Only one indirect pathway representing a partial sequential model produced a significant indirect effect. In this pathway, participant self-control predicted personal motivation, which predicted projected motivation in the targets, which then directly predicted stronger preferences for the good (vs. average) target. That is, even a model without perceived similarity demonstrated indirect effects of self-control through personal and perceived motivation on selection of the supportive target.

After examining these sequential mediational models, we alternated the order of the mediators (e.g., putting perceived similarity earlier than personal motivation in the model). Alternating the order of the mediator variables in the full sequential model did not improve the fit of any indirect effects and, in many cases, produced indirect effects whose confidence intervals included 0. Thus, we retained the original model presented in Figure 8.

Summary. Study 5 provides a larger scale replication of the social positioning effect observed in Studies 1 through 4. Second, this study extended our examination of the *strategic positioning* hypothesis by testing potential mechanisms of the effect. Mediation analyses supported a model where participants high in self-control were more motivated for the

task and projected that motivation onto others, perceiving a greater difference in motivation between helpful and less helpful others, and ultimately perceiving the helpful other to be particularly similar to the self. Thus, although participants with good self-control perceived themselves as similar to others with good self-control, indicating social positioning may be an incidental benefit of their similarity to others, task-specific motivation and projected motivation took precedence in the mediational model, suggesting the preferences are more likely a self-regulatory strategy.

Finally, this study examined boundary conditions for the effect by examining levels of outcome interdependence. Few effects of condition emerged, despite a study design powered to detect small- to medium-sized effects (i.e., $d = .45$), suggesting that stronger preferences for supportive collaborators among individuals with high self-control are relatively robust to the context in which the collaborator will contribute. These results suggest effective self-regulators may be generally sensitive to opportunities to receive help but not necessarily sensitive to the degree to which such help might matter for their outcomes. That is, the preferences of effective (vs. ineffective) self-regulators were stronger for collaborators who were perceived as more likely to help them capitalize on their personal motivation whenever any help would be useful.

Meta-Analytic Summary of Results

Results across five studies provided information relevant to the general theory of social positioning. Because of small sample sizes across some studies and to supplement our use of null hypothesis testing (Cumming, 2014), we next provide a meta-analytic review of the data. We used effect sizes associated with the continuous variables assessed in each study, collapsing across dependent variables as necessary. For Study 4, in which we predicted and found support for a three-way interaction, we used only the effect sizes associated with the condition under which we expected to see social positioning, namely when participants felt nervous about the class.

We used Cohen's d to estimate the magnitude of the interaction terms. These d s ranged from 0.35 (Study 2) to 0.92 (Study 3), ($M = 0.55$; 95% CI = [0.36, 0.73]). The interaction effect was similar across studies, $Q(4) = 3.62$, $p = .46$. Because these interaction terms are omnibus tests, we next

examined the simple effects that were the target of the presented research. Note that across studies, we observed main effects of preferences such that across all dependent variables and all participants, preferences were stronger to interact with others high (vs. low or average) in self-regulatory effectiveness. The purpose of this set of meta-analyses was to document the mean of these preferences for across levels of self-regulatory effectiveness. Accordingly, we calculated the mean of the simple effects of preferences for high versus low self-regulators across studies.

Effects for participants high in self-regulatory effectiveness ranged from 0.82 (Study 2) to 1.83 (Study 5), with a weighted mean d of 1.49 (95% CI = [1.05, 1.93]). Because these effect sizes demonstrated heterogeneity, $Q(4) = 14.23$, $p = .007$, we used a random effects model to estimate the confidence interval of the effect size. Effects for participants low in self-regulatory effectiveness ranged from 0.17 (Study 5) to 1.07 (Study 6), with a weighted mean d of 0.66 (95% CI = [0.29, 1.04]). Again, the effect sizes varied, $Q(4) = 14.35$, $p = .006$, and we thus used the more conservative random effects model for estimation. Because the effect size estimates come from the same data sets, comparisons between the confidence interval estimates at high versus low levels of self-regulatory effectiveness may not be warranted. Regardless, the meta-analysis supports our theory of social positioning: The preferences of effective self-regulators ($d = 1.49$) are likely different than the preferences of less effective self-regulators ($d = 0.66$).

General Discussion

Across five studies, we investigated a general theory of social positioning. Results supported our idea that effective self-regulators show stronger preferences than less effective self-regulators for goal-supportive environments. Effective (vs. ineffective) self-regulators had stronger preferences to spend time with others who are generally successful self-regulators (Study 1), to want to work with others who appear to be successful self-regulators (Studies 2 and 5), and to perceive information from high (vs. low) self-regulators as more useful (Study 3). Furthermore, we investigated dynamics associated with these preferences by examining whether these preferences involve *perceptual sensitivity*, are *targeted* at supportive versus unsupportive sources, and are *strategic* rather than incidental. We found limited support for a perceptual sensitivity mechanism. Participants' self-regulatory effectiveness predicted perceptions of targets' task-specific motivation (Study 5) but not targets' self-control (Studies 1 and 2). Thus, perceptual sensitivity may be related to stronger preferences to the extent that it is focused on a specific goal pursuit rather than perceiving general self-regulatory skills in others. A remaining question is whether this perceptual sensitivity reflects accuracy or bias in detecting the extent to which others might support self-regulation. The present designs do not allow for a comparison of perceived

self-control in targets with those targets' actual self-control; however, future research should be conducted to better understand whether accuracy, bias, or a combination of both works to help effective self-regulators position themselves in supportive social environments.

We did find consistent support for the *targeted support-seeking* hypothesis. The strongest support for this hypothesis comes from Study 3 where participants were asked to rate how useful various forms of support might be. Effective self-regulators did not rate all support as more useful, rather they rated support from high self-regulators as more useful than support from low self-regulators. And in Study 5, although participants projected motivation onto others, they did so selectively, projecting more motivation onto potential collaborators with good self-control than potential collaborators with average self-control.

Our results also appear to support the *strategic positioning* hypothesis; the preferences of effective self-regulators were not simply explained by greater liking of supportive others who may be similar to them. In Study 2, participants reported equally liking confederates appearing to have high and low self-control. In Study 4, effective self-regulators (who reported on their friends and should therefore have equally liked them generally) reported more positive evaluations of instrumental over antigood friends only when they also reported feeling nervous about pursuing the relevant goal. Finally, in Study 5, task-specific motivation played a mediational role in connecting trait self-control to stronger preferences for supportive versus unsupportive collaborators. Although Study 5 also suggested perceived similarity was influenced by trait self-control, which could indicate the preferences were incidental, the best-fitting models placed perceived similarity after motivational variables.

The present studies cut across research methodologies and situations including general self-regulation, specific joint self-regulation, and specific individual self-regulation. An additional advantage of the studies presented here is that we operationalized effective self-regulation through the use of multiple scales. Thus, the results appear to be due to generally effective self-regulatory strategies, not merely skills at one particular form of self-regulation (e.g., trait self-control, delay of gratification). A final advantage of the work presented is that the research paradigms reflected the nature of recruiting support for self-control as active and dynamic. Participants sorted through multiple pieces of social information to evaluate and select social environments. In this way, our studies more likely mirror the kinds of social maneuvering individuals do in their everyday lives than do studies in which participants evaluate a single target based on a presented set of information only about that target.

The present research expands notions of effective self-regulation to consider not only how individuals regulate their internal resources but also how they regulate their social environments to take advantage of external resources that may support their own self-regulation. In doing so, these

findings support recent evidence that self-regulation involves social processes (Fitzsimons & Finkel, 2010; Fitzsimons & Fishbach, 2010; Vohs & Finkel, 2006). Our research suggests effective self-regulators are more likely to position themselves in social environments that further their likelihood of successful outcomes and highlights a proactive component of social relationships and self-regulation that has not yet received much empirical attention.

One limitation of the present work is that we assumed that supportive social environments might be better for self-regulation than independent or individual environments. In the presented studies, participants were always asked to choose *among* sources of potential support rather than to choose to seek social support or not. To more fully understand the dynamics of constructing social environments to support self-control, future research will need to examine preferences for supportive social environments relative to completing tasks independently. A second limitation is that our data only begin to determine why effective self-regulators show these preferences. Our data do suggest that the personal motivation for a task is involved with these stronger preferences. However, interesting possibilities that we have not explored exist, including that effective self-regulators view themselves as more likely to be successful at self-regulation tasks or want others to challenge them to do better. Future research should examine whether these factors might account for the observed pattern of results.

Forms of Self-Regulatory Support

We have suggested the present studies examined four potential ways individuals' self-regulation could be supported by others—goal contagion, inspiration, strategies for pursuit, and shared pursuit. However, these forms of support only scratch the surface of the myriad ways social environments can improve self-regulatory outcomes. People may also rely on their social environments to make exerting self-control more enjoyable (e.g., doing chores alongside a cheerful worker may decrease the unpleasantness of the chores themselves), to reduce the chances of being exposed to a temptation (e.g., a friend who prefers local diners might be less likely to suggest going to an expensive restaurant for lunch), for accountability (e.g., someone might want to avoid the guilt that would accompany ordering a greasy cheeseburger in front of a friend who has been working hard to lose weight), or even for positive emotional support (e.g., a friend who has successfully paid off credit card debt may understand the emotional strain of trying to cut one's spending). Effective self-regulators may additionally consider that social interactions carry repercussions for later self-regulation (e.g., Finkel et al., 2006; Richeson & Shelton, 2003; Vohs, Baumeister, & Ciarocco, 2005) and adjust their general social interactions to maximize self-regulation throughout their day. That these various forms of support involve both processes relevant both to the self-regulator

and the support provider, as well as the interactions between the two, highlight the interpersonal and transactive nature of self-regulation.

Our discussion has been focused on the ways in which people seek out social environments that support their *own* attempts at self-regulation. There is certainly an entirely different approach individuals might take to how their social environments can improve their self-regulatory outcomes involving relying entirely on others' efforts (e.g., Fitzsimons & Finkel, 2010). In fact, research suggests that individuals who are low in trait or state self-control may be more likely to look to others as substitutes for their own effort (Shea, Davisson, & Fitzsimons, 2013). We have focused on trait self-control as a proxy of self-regulatory *skill* rather than *need* and have obtained a consistent set of results that suggest high trait self-control predicts preferences for social environments that support self-regulation. In Study 5, we tested the possibility that people with low self-control might show stronger preferences for support when the burden of goal pursuit was more on the teammate than on the self; instead, we found people with high (vs. low) self-control preferred supportive social environments regardless of whether the team would equally share the burden of goal pursuit or whether the self-regulator or the teammate would share a greater burden. Still, future research should more thoroughly examine how the nature of the task and the nature of the help that can be provided by one's social environment influence social preferences across individuals with varying levels of self-control.

The Value of Ineffective Self-Regulators

Although the present analysis assumes individuals value effective self-regulators for the support they can provide for ongoing regulatory challenges, it does not preclude the possibility that ineffective self-regulators may be valued for different reasons. Ineffective self-regulators, for instance, may provide a lower (attainable) standard of social comparison or a ready excuse for self-handicapping (Hofmann, Baumeister, et al., 2012; E. E. Jones & Berglas, 1978). Similarly, the favorable social comparisons often provided by ineffective self-regulators may be a valuable tool for affect regulation, especially in the face of pursuit failure or negative feedback. Moreover, ineffective self-regulators may provide "cautionary tales" about ineffective strategies and common mistakes. Examining how people view the failures of others and make use of their experiences to improve their own self-regulation represents an important future direction of study.

Conclusion

The present work suggests that preferences for social environments that support self-regulation are related to self-regulatory effectiveness. The work highlights that people may be strategic in how they manage both their internal *and*

external resource for self-regulation. That effective self-regulators look to their social environments for potential support suggests they may be more aware than less effective self-regulators of the processes that affect their success at self-regulation.

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Note

1. The only significant effects of condition to emerge involved its effects on self-reported motivation. Condition produced a main effect on self-reported motivation, $F(2, 200) = 5.29, p = .006$. In addition to a main effect of trait self-control on self-reported motivation, $F(1, 200) = 27.09, p < .001$, a significant interaction emerged between trait self-control and condition on motivation, $F(2, 200) = 3.99, p = .020$. The pattern of results indicated that although individuals with low (vs. high) self-control reported less motivation in all conditions, their motivation for the task was particularly low in the *equal weight* condition.

Supplemental Material

The online supplemental material is available at <http://pspb.sagepub.com/supplemental>.

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