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Motivating the academic mind: High-level construal of academic goals enhances goal meaningfulness, motivation, and self-concordance

William E. Davis[1] · Nicholas J. Kelley[1,2] · Jinhyung Kim[1] · David Tang[1] ·
Joshua A. Hicks[1]

Abstract How one thinks about or conceptualizes a goal has important consequences for the motivational features of goal pursuit. Two experiments tested the hypothesis, inspired by work on meaning in life, action identification theory, and expectancy-value theory, that high-level construal of an academic goal should enhance motivation to pursue that goal. In each experiment, we manipulated high-level versus low-level construal of an academic goal and assessed several variables related to the goal: the perceived meaningfulness of the goal, motivation to pursue the goal, and goal self-concordance. Supporting the hypothesis, individuals who thought about their academic goal in a high-level manner viewed their goal as more meaningful, reported being more motivated to pursue the goal, and reported the goal to be more self-concordant. Implications and future directions are discussed.

Keywords Goal pursuit · Motivation · Self-concordance · Meaning · Academic motivation

Introduction

In research examining the motivational processes underlying goal pursuit, substantial attention has been paid to the type of goal being pursued (e.g., performance/ego/ability goals vs. learning/mastery/task goals; Dweck and Leggett 1988; Elliott and Dweck 1988; Grant and Dweck 2003; Harackiewicz et al. 1997). In addition to emphasizing the type of goal, research also suggests that goal conceptualization or appraisal may be critical for understanding the motivational consequences of goal pursuit. Goal conceptualization can vary across a wide range of characteristics, including features such as approach versus avoidance orientation (e.g., Elliot and McGregor 2001), self-relevance (e.g., Elliot et al. 2011), intrinsic versus extrinsic motivation (e.g., Heyman and Dweck 1992), attributional style (e.g., Licht and Dweck 1984), and goal stability (e.g., Fryer and Elliot 2007). The current experiments take a broad view of goal conceptualization and test whether appraising an academic goal at a generally high-level or low-level influences motivational aspects of that goal. Specifically, we tested the effects of high-level and low-level construal of an academic goal on the perceived meaningfulness of the goal, goal motivation, and goal self-concordance.

High-level goal conceptualization should enhance meaning and motivation

Several theoretical perspectives converge to suggest that high-level construals of a goal should foster motivation and a sense that the goal is meaningful.[1] High-level construals

✉ William E. Davis
   dbillium@gmail.com

✉ Joshua A. Hicks
   joshua.hicks@tamu.edu

[1] Texas A&M University, College Station, TX, USA

[2] Department of Psychology, Northwestern University, Evanston, IL, USA

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[1] Some researchers have emphasized conceptual distinctions between the constructs of meaning and purpose (e.g., Damon et al. 2003; Heintzelman and King 2014). According to these views, purpose is associated with a goal or motivational direction and is externally oriented, whereas meaning is a broader concept that includes a sense of purpose in addition to feelings of coherence and significance in one's life. In the current investigation, our assessment of goal meaningfulness reflects the broader conceptualization of meaning, while explicitly assessing purpose as a constituent component of that meaning.

focus on the superordinate meaning or purpose of a task, answering the question of why the task is performed as opposed to the question of how the task is performed (Trope and Liberman 2010). Focusing on one's superordinate reasons for pursuing a goal or performing a task can highlight importance and significance of the activity, reaffirming why the goal was being pursued in the first place. For instance, imagine an engineering student working diligently to complete a long and difficult set of practice problems for a college course. In the moment, she may find herself focused on correctly applying various formulas and properly computing the correct result in order to complete the assignment. While the student in this case certainly has some motivation to complete the assignment, we suggest that if she were to consider the more high-level reasons she has for completing the assignment (e.g., graduating college and getting a well-paying job), she may experience even more motivation to complete the assignment and would find the task to be more meaningful.

The potential consequences of emphasizing a goal's meaning or purpose should not be underestimated. As Viktor Frankl wrote, paraphrasing Friedrich Nietzsche, "He who has a *why* to live for can bear almost any *how*," (emphasis original; Frankl 1959/2006, pp. 104). This passage underscores the motivational nature of understanding human behavior, highlighting how meaning and purpose can be a motivating force that enables us to overcome difficulties and setbacks in order to achieve our goals (e.g., McKnight and Kashdan 2009). We argue that high-level construals of goals, in contrast to more low-level construals, serve this function and can enhance goal motivation and perceived meaningfulness. To our knowledge, the specific questions of the current research have not been tested empirically, however, recent research is consistent with the notion that high-level construals can promote a more coherent understanding of one's goals that can have implications for goal pursuit. For instance, high-level construals are associated with greater coherence across goals (Clark and Freitas 2013; Freitas et al. 2009), and high-level construal of the goal to engage in physical activity promoted successful pursuit of that goal (Sweeney and Freitas 2014).

Baumeister's (1991) work on meaning in life further illustrates the idea that high-level goal conceptualizations should enhance motivated goal pursuit. According to Baumeister (1991), meaning can appear in life at either low or high levels depending on the complexity of connection. For instance, meaning is considered low-level when two concepts are formed into a simple connection that lacks integrative meanings and is limited to relatively narrow time frames. In contrast, meaning shifts to a higher level when a given connection becomes more complex as it expands to accommodate broader interpretations and new contexts. This upward movement often broadens one's

perspective about how things are connected with each other. Similarly, Schnell's (2009) hierarchic model of meaning views meaning in life as arising from increasingly complex representations and interpretations of objects, actions, and events. Conceptualizing a goal in a high-level manner (i.e., high levels of meaning) not only enhances the perceived meaningfulness of a goal, but can enhance one's motivation to pursue a goal by placing it in a broader context of integrated relationships and connections.

The idea that high-level meaning can increase motivated goal pursuit also resonates well with action identification theory (Vallacher and Wegner 1987). This theory posits that identifications of actions (e.g., taking a test) can range from low-level identities focusing on how the actions are performed (e.g., filling in bubbles on an answer sheet with a pencil), to high-level identities specifying why the actions are performed (e.g., demonstrating one's knowledge). As in high levels of meaning, identifying an action in terms of intention rather than method may enhance motivation for goal pursuit by making the goal more purposeful and meaningful. This idea was recently supported by a provocative set of studies conducted by Yeager et al. (2014) showing that interventions aimed at enhancing a higher-level purpose (e.g., self-transcendent purpose) improved academic goal regulation for both adolescents and college students (see also Yeager et al. 2012).

Finally, Eccles and colleagues' expectancy-value theory of achievement motivation (Wigfield and Eccles 2000) provides another framework under which high-level construals would be expected to enhance motivation. According to expectancy-value theory, goal-relevant behaviors (e.g., choosing tasks, persistence, effort, performance) are shaped by expectancies for success and subjective value placed on activities. Subjective value includes intrinsic or interest value (enjoyment from performing the task or subjective interest), attainment value (importance to the self of doing well on a task), utility value (how well a task fits into future plans), and cost (potential losses, effort required, emotional cost). People are highly motivated to pursue goals in which they expect to be successful and place a great deal of subjective value. In the current context, high-level construals would seem to be most relevant in enhancing the subjective value of a goal by specifically drawing attention to the attainment value of a goal, as well as the goal's intrinsic or utility value. By increasing the subjective value of a goal, high-level construals should also effectively bolster an individual's motivation to pursue that goal. Together, these theoretical perspectives provide reason to suspect that high-level construals of goals should promote motivation and a sense that the goal is meaningful.

The distinction made in expectancy-value theory between intrinsic and extrinsic reasons for valuing a task (i.e., intrinsic value vs. utility value) also raises an

important question regarding the effect of high-level construals on perceptions of goals. Assuming that high-level construals of a goal promote motivation to pursue that goal, to what extent is that motivation intrinsically or extrinsically oriented? In the current research, we tested this using Sheldon and Elliot's (1999) self-concordance measure. Self-concordance represents the "extent to which people pursue their set of personal goals with feelings of intrinsic interest and identity congruence, rather than with feelings of introjected guilt and external compulsion" (Sheldon and Houser-Marko 2001, p. 153). Theorists have argued that living in accord with one's true self and enacting one's deeply held values (i.e., self-concordant goal pursuits) are defining characteristics of a meaningful existence (e.g., Aristotle 350 BCE/1998; Ryan and Deci 2000; Waterman 1993). Supporting these perspectives, research has demonstrated that intrinsic goal pursuits are associated with higher levels of meaning in life (Huta and Ryan 2010; McGregor and Little 1998). Given on the established relationship between intrinsic motivation and meaning, we explored the possibility that not only do self-relevant goals feel more meaningful, but increasing the perceived meaningfulness of goals (via high-level construal) can make them feel more self-concordant.

Overview of the current research

The current research tested the hypothesis, inspired by theoretical perspectives on meaning and action identification theory, that high-level goal conceptualizations should increase goal motivation and perceived meaningfulness in an academic context. In two independent experiments, we randomly assigned college students to think about *why* they pursue the academic goal to "get a good grade in one of my classes" (high-level construal) or *how* they pursue that goal (low-level construal) and assessed three indicators of goal motivation. We first assessed the extent to which participants believed the goal provided their lives with meaning and purpose. Although it may seem highly likely that asking participants to consider why they pursue a particular goal should enhance their sense that that goal provides a sense of meaning and purpose, this may not necessarily be the case. The manipulation simply asks participants to consider why they pursue the goal, not why the goal is meaningful and purposeful. It is possible, however unlikely, that upon reflection a participant could realize that they don't really have a good reason for pursuing their goal and that it doesn't actually provide them with a sense of meaning or purpose. Thus, assessing the perceived meaning and purpose provided by the goal can provide valuable information and clarification regarding the effects of the manipulation. Following the measure of goal meaning, we assessed self-reported motivation to achieve the goal, and goal self-concordance.

Experiment 1

As an initial test of our hypothesis, we conducted an exploratory experiment. We randomly assigned participants to think about a specific academic goal ("get a good grade in one of my classes") in either a high-level or low-level manner and assessed the extent to which the goal provides their life with meaning and purpose, their motivation to pursue the goal, and goal self-concordance. To serve as a comparison to the academic goal conditions, another group of participants completed the same tasks and materials but were instead asked to think about a non-specific goal ("a goal you want to accomplish within a week") in a high-level or low-level. This resulted in a 2 (construal: high-level vs. low-level) × 2 (goal domain: academic vs. non-specific) factorial design for Experiment 1. The addition of the non-specific goal conditions enabled us to test if any observed effects in the specific context of an academic goal would generalize to goals that participants were able to freely choose.

Methods

Participants

One hundred eighty-two participants (101 female) participated for credit towards their introductory psychology course requirements. A sample size of approximately 40 participants per cell was determined before data collection based on recommendations in the psychological literature (e.g., Simmons et al. 2011; VanVoorhis and Morgan 2007) and the authors' experience conducting similar studies. Data collection was terminated as soon as possible after this goal was met. Participants recruited from the psychology department participant pool and were 18–23 years of age ($M = 18.67$, $SD = 0.90$), predominantly white (79 %) and non-Hispanic (80 %). The participant pool was comprised of college students enrolled in introductory psychology courses that included research experience as part of their course requirements. Students could fulfill their research requirement by participating in research or by completing an alternative assignment (e.g., writing a paper reviewing psychological research on a topic). The introductory psychology course was also one of many courses that could be taken to fulfill a general education requirement in the social and behavioral sciences necessary for graduation. Data from the most recent spring semester indicate that very few students in the participant pool report having declared a major in Psychology (1.8 %), and that most are first-year (70.7 %) or second-year (20.3 %) students.

Materials and procedure

Participants were randomly assigned to one of four conditions in a 2 (construal: high-level vs. low-level) × 2 (goal domain: academic vs. non-specific) factorial design. Using the paper and pencil writing task of Freitas et al. (2004), participants were asked to write about either the academic goal to "get a good grade in one of my classes" or the non-specific goal of "a goal you want to accomplish within a week." Participants were randomly assigned to write about their goal in either a high-level manner (i.e., answering the question "Why do you pursue that goal?") or a low-level manner (i.e., answering the question "How do you pursue that goal?"). After responding to the first question, participants were again asked *how [why] do you pursue this goal*. All participants were asked to provide a total of four responses to the question of how/why they pursue the goal.[2] Participants describing why they pursue the goal begin at the bottom of the page and move up the page as they provide their answers, whereas participants describing how they pursue the goal begin at the top of the page and move down the page as they provide their answers (see Freitas et al. 2004). In addition to the original instructions and procedures described by Freitas et al. (2004), participants in the academic goal domain conditions received the following instructions (with wording for the high-level construal condition in brackets):

> Take a moment to think about HOW [WHY] you pursue the goal to "get a good grade in one of my classes." On your desk is a sheet of paper with boxes and arrows going from the top to the bottom [bottom to the top]. In the box below the first box at the top [above the box at the bottom], please describe HOW [WHY] you pursue the goal to "get a good grade in one of my classes." After you have written your answer, move to the next box down [up] and describe HOW [WHY] you pursue the answer you gave in the previous box. Continue answering the question "HOW?" ["WHY?"] for each of your answers until you have filled all of the boxes.

Participants in the non-specific goal domain conditions received the following instructions (with wording for the high-level construal condition in brackets):

> For this thought exercise, please consider a goal you want to accomplish within a week. Take a moment to think about HOW [WHY] you pursue the goal you want to accomplish within a week. On your desk is a sheet of paper with boxes and arrows going from the top to the bottom [bottom to the top]. In the first box at the top [box at the bottom], describe the goal you want to accomplish within a week. Then, in the next box down [up], please describe HOW [WHY] you pursue the goal you described in the first box. After you have written your answer, move to the next box down [up] and describe HOW [WHY] you pursue the answer you gave in the previous box. Continue answering the question "HOW?" ["WHY?"] for each of your answers until you have filled all of the boxes.

Meaningfulness of the goal The extent to which participants perceived the goal to "get a good grade in one of my classes" or the "goal you want to accomplish within a week" as meaningful was assessed using two items: "This goal gives my life purpose," and "This goal gives my life meaning." ($M = 5.10$, $SD = 1.23$, $\alpha = 0.90$). Participants indicated their agreement or disagreement with these statements on a 7-point scale (1 = *strongly disagree*; 7 = *strongly agree*).

Motivation to pursue the goal Motivation to pursue the goal was also assessed using two items: "I am motivated to achieve this goal," and "I am very committed to this goal." ($M = 6.17$, $SD = 0.80$, $\alpha = 0.75$). Participants indicated their agreement or disagreement with these statements on a 7-point scale (1 = *strongly disagree*; 7 = *strongly agree*).

Self-concordance Goal self-concordance was assessed using Sheldon and Elliot's (1999) self-concordance scale. Reflecting the operational definition of self-concordance (e.g., Sheldon and Houser-Marko 2001), the scale includes a total of four items that assess external ("I strive for this goal because another person or the situation demands it."), introjected ("I strive for this goal because I otherwise would feel guilty, afraid or ashamed."), identified ("I strive for this goal because I am convinced of its importance."), and intrinsic ("I strive for this goal because it gives me pleasure and fun.") motivations for pursuing a goal. Scores on the external and introjected items were subtracted from the identified and intrinsic items to form a composite score ($M = 1.84$, $SD = 3.79$) with higher values indicating greater goal self-concordance.

Results

All analyses are reported using two-tailed significance tests. Chi square tests confirmed that participant

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[2] To examine potential demand characteristics in both studies, we asked participants to respond to the question "In your own words, what was the purpose of the experiment?" after completing the experiment. A review of the responses revealed that while participants sometimes identified the experiment as examining their goals, motivation, and/or sense of purpose in general, they did not identify the specific hypotheses and relationships being tested.

demographics did not significantly differ across conditions ($ps > .076$). Correlational analyses found moderate correlations among the dependent variables, with goal meaningfulness being positively associated with goal motivation $r(180) = 0.50$, $p < .001$, and self-concordance $r(179) = 0.24$, $p = .001$. Goal motivation was also positively associated with self-concordance $r(179) = 0.26$, $p < .001$. We first conducted a one-way multivariate analysis of variance (MANOVA) with construal (high-level vs. low-level), goal domain (academic vs. non-specific), and their interaction predicting the dependent variables of goal meaningfulness, motivation, and self-concordance. Results revealed a significant effect of the construal manipulation on the dependent variables, $F(3,175) = 5.18$, $p = .002$, Wilks' $\Lambda = 0.92$, $\eta_p^2 = 0.08$. The effect of goal domain was also significant, $F(3,175) = 14.27$, $p < .001$, Wilks' $\Lambda = 0.80$, $\eta_p^2 = 0.20$. Finally, the interaction term was also marginally significant, $F(3,175) = 2.44$, $p = .066$, Wilks' $\Lambda = 0.96$, $\eta_p^2 = 0.04$. Univariate tests were then conducted to examine the effects of construal, goal domain, and their interaction on the dependent variables (see Fig. 1).

Meaningfulness of the goal

How meaningful participants rated the goal was subjected to a 2 (construal: high-level vs. low-level) × 2 (goal domain: academic vs. non-specific) between-subjects ANOVA. There was a main effect of construal such that participants who wrote about *why* they pursue the goal ($M = 5.34$, $SD = 1.11$) reported that the goal was more meaningful than those who wrote about *how* they pursue the goal ($M = 4.86$, $SD = 1.29$), $F(1,178) = 8.87$, $p = .003$, $\eta_p^2 = 0.047$. There was also a main effect of goal type such that participants, irrespective of construal, reported that the academic goal ($M = 5.60$, $SD = 1.02$)

was more meaningful than the non-specific weekly goals ($M = 4.59$, $SD = 1.21$), $F(1, 178) = 38.84$, $p < .001$, $\eta_p^2 = 0.179$. Construal and goal domain did not interactively predict the meaningfulness of the goal, $F(1,178) = 1.72$, $p = .19$, $\eta_p^2 = 0.010$.

Motivation to pursue the goal

Motivation to pursue the goal was subjected to a 2 (construal: high-level vs. low-level) × 2 goal domain (academic vs. non-specific) between-subjects ANOVA. There was no main effect of construal, ($F(1,178) = 1.34$, $p = .25$, $\eta_p^2 = 0.007$), or goal domain, ($F(1,178) = 2.64$, $p = .106$, $\eta_p^2 = 0.015$) on goal motivation. There was, however, a significant construal × goal domain interaction, $F(1,178) = 5.32$, $p = .02$, $\eta_p^2 = 0.029$. Motivation to pursue the non-specific goal did not differ between the high-level ($M = 6.01$, $SD = 0.76$) and low-level ($M = 6.14$, $SD = 0.73$) construal conditions, $t(88) = 0.85$, $p = .40$, Cohen's $d = 0.18$. However, participants wrote about *why* they pursue the academic goal ($M = 6.47$, $SD = 0.60$) reported being more motivated than those who wrote about *how* they pursue the academic goal ($M = 6.07$, $SD = 0.99$), $t(90) = 2.36$, $p = .020$, Cohen's $d = 0.50$.

Self-concordance

Goal self-concordance was subjected to a 2 (construal: high-level vs. low-level) × 2 (goal domain: academic vs. non-specific) between-subjects ANOVA. There was a main effect of construal on self-concordance such that participants who wrote about *why* they pursue a goal reported greater self-concordance ($M = 2.62$, $SD = 4.01$) relative to those who wrote about *how* they pursue a goal ($M = 1.04$, $SD = 3.41$), $F(1,177) = 8.28$, $p = .005$, $\eta_p^2 = 0.045$. There was also a marginal main effect of goal
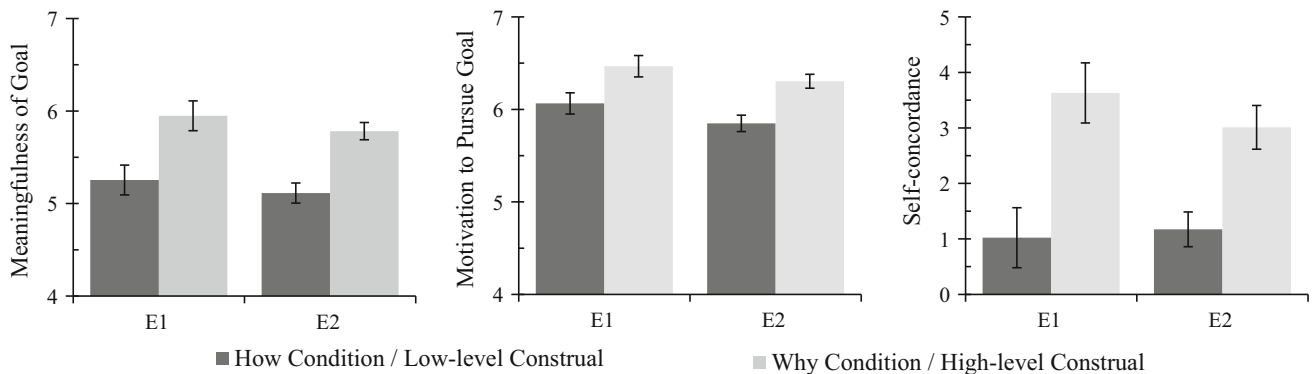

Fig. 1 Meaningfulness, motivation, and self-concordance ratings for participants' goal to "get a good grade in one of my classes" in high-level and low-level construal conditions across Experiment 1 and Experiment 2. *Error bars* represent standard error of the mean. *E1* Experiment 1, *E2* Experiment 2

domain such that participants reported greater self-concordance for academic goals ($M = 2.33$, $SD = 3.64$) than a non-specific weekly goal ($M = 1.34$, $SD = 3.90$), $F(1,177) = 3.30$, $p = .07$, $\eta_p^2 = 0.018$. Finally, there was also a marginal construal $\times$ goal domain interaction, $F(1,178) = 3.62$, $p = .06$, $\eta_p^2 = 0.020$. Self-concordance of the non-specific goal did not differ between the high-level ($M = 1.60$, $SD = 4.14$) and low-level ($M = 1.07$, $SD = 3.68$) construal conditions, $t(87) = 0.64$, $p = .52$, Cohen's $d = 0.14$. However, participants who wrote about *why* they pursue their academic goal ($M = 3.63$, $SD = 3.65$) reported greater self-concordance than those who wrote about *how* they pursue the goal ($M = 1.02$, $SD = 3.17$), $t(90) = 3.66$, $p < .001$, Cohen's $d = 0.77$.

Discussion

Experiment 1 found that thinking about an academic goal with a high-level construal enhanced the meaningfulness of the goal, motivation to pursue the goal, and perceptions of the goal as self-concordant. These findings are consistent with the hypothesis that high-level goal conceptualization promotes goal meaningfulness and motivation. Thinking about non-specific goals in a high-level manner promoted goal meaningfulness, but did not influence motivation to pursue the goal nor goal self-concordance.

There are several differences between the academic goal and non-specific goals that may provide some insight into why high-level construals enhanced the meaningfulness of non-specific goals but did not affect goal motivation or self-concordance. One consideration is that participants rated the non-specific goals as less meaningful than the academic goals ($M_{\text{non-specific}} = 4.59$ and $M_{\text{academic}} = 5.60$, respectively). In the current research, we propose that high-level construals can enhance goal motivation because they focus attention on the broader meaning and purpose of a goal. If the goal does not have a particular strong or clear sense of meaning to begin with, a high-level goal construal may only highlight that limited sense of meaning or feelings of indifference. As an exploratory analysis relevant to this possibility, we tested if goal meaningfulness interacted with construal level to predict goal motivation and self-concordance for non-specific goals. The interaction between goal meaningfulness and construal level did not significantly predict either goal motivation ($p = .49$) or self-concordance ($p = .22$) in these analyses. Given these results, it seems that enhanced goal meaningfulness does not necessarily translate into enhanced goal motivation or feelings of self-concordance. Consistent with these variables being relatively independent, goal meaningfulness was only moderately associated with goal motivation and self-concordance in the current experiments.

Allowing participants in the non-specific goal conditions to freely choose "a goal you want to accomplish within a week" was intended to provide a contrast to the academic goal conditions that specifically focused on the goal to "get a good grade in one of my classes." However, an examination of the goals participants selected in the non-specific goal conditions raises some questions about how the results for the non-specific goal condition should be interpreted. After categorizing the non-specific goals as academic or non-academic to the best of our ability given the information provided by participants, we found that approximately 77 % of the goals appeared to be academically relevant. Although many of these non-specific goals appear to share the same domain as the academic goal to "get a good grade in one of my classes," there was considerable variation in their content. For example, one participant identified the relatively specific goal to "write my history essay," whereas another participant reflected on the higher-level goal to "be on top of things with school." Several participants described their goal to get a particular grade on an upcoming exam. In contrast to this variability in the non-specific goal conditions, participants in the academic goal conditions all considered the same goal presented in the same manner. Additionally, the goal to "get a good grade in one of my classes" is a higher-level construal than many of the goals participants considered in the non-specific goal conditions. With the similarities and differences between the academic and non-specific goals in mind, it is perhaps difficult to draw clear conclusions from the results of the non-specific goal conditions. Accordingly, Experiment 2 focused on replicating and extending the observed effects of construal for the academic goal and did not examine non-specific goals.

Experiment 2

There were two primary objectives for Experiment 2. First, and most importantly, we sought to directly replicate the findings of Experiment 1 using a more highly powered design (Bakker et al. 2012). Second, we wanted to examine whether the manipulation would influence a behavioral indicator of goal pursuit. The functional role of motivation is to facilitate behavior instrumental in attaining a goal or satisfying a motive (e.g., Brehm and Self 1989), and self-reports of motivation are associated with instrumental behavioral outcomes (e.g., Gottfried 1985; Vansteenkiste et al. 2006). Given the established behavioral consequences of (intrinsic) motivation and self-concordance, we provided participants in Experiment 2 an opportunity to engage in a goal-relevant instrumental behavior after thinking about their academic goal in a high-level or low-level manner.

Methods

Participants

One hundred and eighty-five participants (111 female) participated during the final month of the fall semester for credit toward their introductory psychology course requirements. Sample size was determined using the procedure described in Experiment 1, with writing task (how/why) and presentation order (behavioral task before or after goal items) considered independent factors resulting in 4 cells. Participants were 18–23 years of age ($M = 18.86$, $SD = 1.01$), predominantly white (86 %) and non-Hispanic (74 %).

Materials and procedure

Participants completed the same how/why writing task used in Experiment 1. Following the writing task, participants were given the opportunity to view up to 15 "tips for academic success" (e.g., "Learn to manage your time effectively: Make a time schedule and stick to it. Make a daily list of things to do and assign each item a priority rating, but recognize that priorities can change."). These tips were gathered and adapted from materials provided to students by several colleges and universities. After being informed that "we would like to offer you an opportunity to view some tips about how you can succeed in your classes and college in general," participants were given the option to view the first tip for academic success, or decline to view the tips. The tips for academic success were presented individually and participants were given the option to view another tip or stop viewing the tips for academic success each time. Presumably, individuals who are more motivated to pursue their academic goal should direct their behavior towards that goal, and viewing more tips was one readily available means of doing just that. Thus, the number of times each participant indicated that they wanted to see a tip for academic success served as our behavioral indicator of academic goal pursuit ($M = 6.68$, $SD = 6.01$). Participants also completed the same items assessing goal meaning ($M = 5.45$, $SD = 1.03$, $\alpha = 0.90$), goal motivation ($M = 6.08$, $SD = 0.82$, $\alpha = 0.79$), and self-concordance ($M = 2.09$, $SD = 3.53$) used in Experiment 1. To examine potential order effects, the presentation order of the tips and goal items from Experiment 1 was counterbalanced, such that participants were randomly assigned to complete the tips for academic success task before the goal items, or vice versa. Scores on the dependent variables did not vary as a function of presentation order ($ps \geq .192$). Presentation order was not a significant predictor in the multivariate or univariate tests reported in Experiment 2 ($ps > .37$), nor did it interact with the construal manipulation to influence the multivariate or univariate tests, $ps > .30$. Thus, for ease of presentation, the reported analyses do not include presentation order.

Results

Chi square tests confirmed that participant demographics did not significantly differ across conditions ($ps > .276$). Correlational analyses found moderate correlations among the dependent variables, with goal meaningfulness being positively associated with goal motivation $r(183) = 0.46$, $p < .001$, and self-concordance $r(183) = 0.27$, $p < .001$. Goal motivation was also positively associated with self-concordance $r(183) = 0.21$, $p < .001$. To test our primary hypotheses, we first conducted a one-way MANOVA. Results revealed a significant effect of the construal manipulation across the dependent variables of goal meaningfulness, motivation, self-concordance, and number of tips viewed, $F(4,179) = 8.25$, $p < .001$, Wilks' $\Lambda = 0.79$, $\eta_p^2 = 0.16$. Univariate tests were then conducted examining each dependent variable (see Fig. 1).

Meaningfulness of the goal

Replicating Experiment 1, participants who wrote about why they pursue an academic goal reported that the goal was more meaningful ($M = 5.78$, $SD = 0.90$) than those who wrote about how they pursue that goal ($M = 5.11$, $SD = 1.05$), $F(1,183) = 21.59$, $p < .001$, $\eta_p^2 = 0.11$.

Motivation to pursue the goal

Similarly, participants who wrote about why they pursue an academic goal reported having more motivation to pursue that goal ($M = 6.30$, $SD = 0.73$) than those who wrote about how they pursue the goal ($M = 5.85$, $SD = 0.86$), $F(1,183) = 15.18$, $p < .001$, $\eta_p^2 = 0.08$.

Self-concordance

Participants who wrote about why they pursue an academic goal reported greater self-concordance ($M = 3.01$, $SD = 3.78$) than those who wrote about how they pursue that goal ($M = 1.17$, $SD = 3.02$), $F(1,183) = 13.37$, $p < .001$, $\eta_p^2 = 0.07$.

Tips for academic success

Participants who wrote about why they pursue an academic goal ($M = 6.95$, $SD = 6.08$) did not view significantly more tips than those who wrote about how they pursue an academic goal ($M = 6.41$, $SD = 5.97$), $F(1,182) = 0.36$, $p = .55$, $\eta_p^2 = 0.002$. While these results were unexpected,

a visual inspection of the data revealed a bimodal distribution for number of tips viewed. Specifically, many participants either viewed no tips ($n = 48$) or all 16 of the tips ($n = 36$). A multinomial logistic regression was then conducted with condition predicting number of tips viewed, after recoding the dependent variable into the categories of 0 tips viewed, 1–5 tips viewed, 6–10 tips viewed, 11–15 tips viewed, and 16 tips viewed. Condition was not a significant predictor of number of tips viewed in the multinomial logistic regression, $X^2(4, N = 185) = 0.81$, $p = .94$. Correlational analyses further revealed that the number of tips participants elected to view was not strongly associated with the reported meaningfulness of the academic goal, $r(184) = 0.13$, $p = .08$; motivation to pursue the goal, $r(184) = 0.02$, $p = .81$; or self-concordance, $r(184) = 0.15$, $p = .05$.

Discussion

Consistent with the first experiment, thinking about an academic goal in a high-level manner made it feel more meaningful, increased motivation to pursue the goal, and enhanced feelings of goal self-concordance. Thinking about academic goals in a high-level manner did not, however, influence a behavioral index of goal pursuit—the number of tips for academic success participants elected to view.

General discussion

In the current experiments, we tested the effects of high-level versus low-level construal on goal meaningfulness, motivation, and self-concordance in an academic context. We hypothesized that high-level construals should lead to greater goal meaningfulness, motivation, and self-concordance for the academic goal to "get a good grade in one of my classes." Two experiments provided support for this hypothesis. Experiment 1 found that high-level goal construal led to higher scores on all three dependent measures compared low-level goal construal. In contrast, high-level construal of the non-specific goal of "a goal you want to accomplish within a week" only promoted goal meaningfulness compared to low-level construals. Experiment 2 replicated the findings of Experiment 1, showing that high-level construal of an academic goal again enhanced goal meaningfulness, motivation, and self-concordance compared to low-level goal construal. No differences between high-level and low-level construal were observed when a behavioral indicator of goal pursuit (viewing tips for academic success) was assessed, though this was found to be a less than ideal measure of goal-relevant behavior. Together, both experiments provide consistent evidence that

high-level goal construal led participants to view their academic goals as more meaningful, report more motivation to pursue those goals, and perceive those goals to be more self-concordant.

The current experiments are consistent with the notion that high-level goal construal can promote the perception that the goal provides one's life with meaning and purpose. This idea is supported by theoretical perspectives suggesting that high-level construal should enhance the perceived meaningfulness of one's life (Baumeister 1991; Vallacher and Wegner 1987), and recent findings demonstrating that enhancing the meaningfulness of a goal increases the likelihood that individuals will perceive that goal more in a more high-level manner (Yeager et al. 2014). High-level construals were also found to promote goal self-concordance across both of the current experiments. These results provide further support for the robust relationship between intrinsic goal pursuits and the experience of meaning (Aristotle 350 BCE/1998; McGregor and Little 1998; Ryan and Deci 2000; Waterman 1993), and further suggest that reflecting on "why" one pursues his or her goals can actually increase perceptions of goal self-concordance.

Although high-level construals consistently led to enhanced goal meaningfulness, motivation, and self-concordance for the academic goal in the current experiments, it is important to consider that high-level construals may not always be more beneficial than low-level construals. For instance, if an individual finds that achieving a particular goal is extremely challenging, high-level action identities (i.e., thinking about why they are pursuing the goal in the first place) may not actually help them accomplish the goal. Instead, a low-level action identity may be more beneficial in making goal progress and promoting motivation in some situations. For example, previous research has examined how the match between construal (high vs. low) and goal-relevant skill (high vs. low) can predict goal outcomes (Ferguson and Sheldon 2010). People lower in goal-relevant skill benefitted more by thinking about "how" they can accomplish their goals, whereas people higher in goal relevant skill benefitted more by thinking about "why" they pursue their goals. Relevant to the current research, in one study, using different methodology, no consistent main effects of construal on goal self-concordance were observed for the academic goal of "keeping up with schoolwork" (Ferguson and Sheldon 2010; Study 2). Rather, only individuals high in goal relevant skill reported high self-concordance after thinking about why they pursued a goal. Interestingly, the results of our Experiment 1 also suggest that potential benefits of high-level construals are not universally applicable. Whereas high-level construals enhanced meaningfulness, motivation, and self-concordance for the academic

goal, only meaningfulness was enhanced when participants were asked to consider a non-specific goal.

These findings highlight the importance of future research in uncovering the conditions that make it likely (or unlikely) that high-level construals will promote goal meaningfulness, motivation, and self-concordance. For example, some people may have strong extrinsic reasons for pursuing their academic goals because they would feel guilty about letting down their parents if they did not, or because their parents demand it. In this case, high-level goal construal may actually highlight one's extrinsic reasons for pursuing the goal. Extrinsically motivated goals are associated with less desirable psychological characteristics and outcomes, and are less likely to be achieved than intrinsically motivated goals (e.g., Sheldon and Elliot 1999; Sheldon and Houser-Marko 2001). Therefore, one important direction for future research is to explore how high-level construal of specific types of goals (e.g., intrinsic vs. extrinsic; approach vs. avoidance) may differentially influence motivation to pursue the goals. Although we specifically asked participants to consider the goal to "get a good grade in one of my classes" in the current experiments, goal construal are certainly relevant outside of an academic context. Future research should consider goals from other domains that people may find particularly meaningful, such as one's health, work, family, or relationships. The potential influence of social desirability biases is also an important consideration, as participants may be motivated to provide inflated ratings of meaning, motivation, and self-concordance for goals in highly valued domains (e.g., higher education).

One factor limiting the generalizability of the current findings is the general lack of diversity in the participant samples. In addition to being predominantly White, the current samples are drawn from college students in a Western, Educated, Industrialized, Rich, and Democratic (WEIRD) society (Henrich et al. 2010). Testing the generalizability of the observed effects across diverse populations is an important goal for future research. Another limitation of the current experiments can be found in the measures used to assess the dependent variables. The inherent limitations of self-report measurements certainly apply to the current experiments, though one could argue that self-reports may be particularly apt in assessing subjective feelings of meaning and self-concordance. The behavioral assessment used in Experiment 2 provided a test of potential behavioral outcomes by assessing the number of tips for academic success participants chose to view, but this behavioral assessment had limitations of its own. First, it is possible that the number of tips viewed does not speak well to one's engagement with those tips. For example, one could view all of the tips relatively quickly without consciously deliberating on them, or one could spend a great deal of time thinking about each tip. It may be the case that participants engagement with the tips (i.e., length of time viewing the tips) rather than the number of tips viewed may be a better behavioral index of motivation. Asking participants to indicate if or how they intend to implement the tips they read could also serve as an indicator of how carefully participants considered the tips.

It may also be possible that despite being explicitly told that the tips could help them accomplish their goals for academic success, participants asked to consider why they pursue their goal to get a good grade are not automatically more likely to take advantage of a potential resource such as the tips for academic success. Research on implementation intentions (e.g., Gollwitzer 1999) suggests that valuing a goal does not always translate into goal-relevant actions. By forming simple plans that link goal-directed behaviors to critical situations (implementation intentions; e.g., "Whenever someone offers me advice about how to succeed in college, I will pay attention and carefully consider it."), people are better able to make progress toward the attainment of their goals by more consistently engaging in goal-directed behaviors. Perhaps some participants experienced difficulty translating their goal (academic success) into action (viewing tips for academic success) in Experiment 2. The bimodal distribution also revealed that the majority of participants viewed no tips or all of the tips, making this task potentially ill-suited as a continuous (and normally distributed) behavioral index of motivation.

In any case, future research should continue to explore alternative assessments of goal meaningfulness and motivation to pursue the goal, in addition to focusing on the behavioral consequences of increased motivation in this context. Measures of intended effort, goal expectancy, or actual performance (e.g., academic grades), just to name a few, could all provide valuable information about participants' goal pursuits. A greater diversity of assessment methods would also have the benefit of reducing common method bias. Future research could also aid in clarifying the temporal duration of the observed effects by establishing the extent to which changes in construal have a lasting effect on motivation.

The current research demonstrated that high-level construal of an academic goal made the goal feel more meaningful, enhanced motivation to pursue the goal, and made the goal feel more self-concordant. These findings extend our understanding of the motivational consequences of goal construal while raising questions about how high-level goal conceptualizations bear on the perception of meaningful goal pursuits.

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