

## ATTITUDES AND SOCIAL COGNITION

## It's the Journey, Not the Destination: How Metaphor Drives Growth After Goal Attainment

Szu-Chi Huang and Jennifer Aaker  
Stanford Graduate School of Business

People pursue goals throughout their lives, and many of these attempts end happily—a goal is achieved. However, what facilitates the continuation of behaviors that are aligned with the completed goal, such as continuing to monitor food intake after completing a diet program? The results of 6 studies involving over 1,600 people across cultures and samples (executives in Africa, dieters in a 7-day food diary program, exercisers in a 14-day walking program, and college students) demonstrated that construing an achieved goal as a journey one has completed (compared with an alternative metaphor of having reached a destination, or a no-metaphor control) led to a greater likelihood of people continuing behaviors aligned with this attained goal. These findings demonstrated how shifting people's focus of a metaphor (i.e., focusing on the journey vs. the destination part of a completed path) can lead to consequentially different perceptions and behaviors. We isolated a mechanism for why people would continue goal-aligned behaviors after attaining their specific goals—enhanced perceptions of personal growth.

*Keywords:* journey/destination, metaphor, growth, goal attainment, well-being

*Supplemental materials:* <http://dx.doi.org/10.1037/pspa0000164.supp>

People pursue goals throughout their lives. Students attend study groups to excel in school, individuals enroll in exercise programs to get healthier, and dieters count calories and monitor portion sizes to lose weight. Although some of these pursuits may end in failure, many end in success—achieving the goal one has originally set out to pursue. A recent study showed that on average, 60% of students in the United States successfully completed the pursuit of their college degrees within 6 years (U.S. Department of Education, National Center for Education Statistics, 2016). In another study, 74% of participants in the Diabetes Prevention Program successfully achieved their activity goals at the end of the program (Wing et al., 2004).

Yet, what happens after a specific goal is achieved? By definition, goal attainment allows individuals to disengage from behaviors directed at achieving that specific goal (Ferguson & Bargh, 2004; Förster, Liberman, & Higgins, 2005). This postgoal-

attainment disengagement is functional, as it allows people to focus on other goals (Gollwitzer, 1999; Kruglanski et al., 2002). However, disengaging from these behaviors can also be detrimental, because the behaviors aligned with the completed goal can be beneficial in and of themselves, and can often help people achieve more long-term, abstract, higher-level goals in life. For instance, it is suboptimal for those who have achieved a specific weight-loss goal to stop exercising or eating healthily, even if the original goal of losing 10 pounds was accomplished. To illustrate, a scientist at a federal research center followed contestants of the reality TV show *The Biggest Loser* for 6 years after their victorious night of achieving their goal weight, and found that most of these contestants could not keep the pounds off—sadly, they gained back even more weight.<sup>1</sup>

The objective of this research is to illuminate how and why people may continue goal-aligned behaviors after the attainment of a specific goal. To do so, we draw from theories of goal pursuit models (e.g., Heckhausen & Gollwitzer, 1987; Huang & Zhang, 2011; Koo & Fishbach, 2008, 2012; Liberman & Förster, 2000), intrinsic motivation and growth (e.g., Dweck & Leggett, 1988; Fisher, 1978; Kasser & Ryan, 1993; Kruglanski, 1975; Ryan & Deci, 2000), and conceptual metaphor (Gibbs, 1994; Keefer, Landau, Sullivan, & Rothschild, 2011; Krishna & Schwarz, 2014;

---

This article was published Online First June 24, 2019.

Szu-Chi Huang and Jennifer Aaker, Graduate School of Business, Stanford University.

The authors are grateful to Stanford Behavioral Lab (Nicholas Hall, and Monica Nelson, Olivia Anne Foster-Gimbel, and Merrick Osborne) as well as Stanford Seed Program (Davis Albohm, and Hilary Chart) for their generous support on data collection.

Correspondence concerning this article should be addressed to Szu-Chi Huang, Graduate School of Business, Stanford University, 655 Knight Way, Stanford, CA 94305. E-mail: [huangsc@stanford.edu](mailto:huangsc@stanford.edu)

<sup>1</sup> <https://www.nytimes.com/2016/05/02/health/biggest-loser-weight-loss.html>; see also [http://content.time.com/time/specials/2007/article/0,28804,1626795\\_1627112\\_1626456,00.htm](http://content.time.com/time/specials/2007/article/0,28804,1626795_1627112_1626456,00.htm).

Lakoff & Johnson, 1980; Lee & Schwarz, 2014; Xu & Labroo, 2014), to conceptualize and test what facilitates the continuation of behaviors that are aligned with a completed goal, such as continuing to learn or exercise after finishing an online course or completing a workout program.

### The Problem: Disengagement After Attaining a Goal

Goal pursuit is a long process consisting of multiple phases. For example, consider the goal of completing a marathon: one has to initiate the pursuit, move from the beginning phase (e.g., starting training) to the halfway point (e.g., running 13 miles and improving) to the advanced phase (e.g., entering the race and reaching the finish line). One of the earliest models designed to illustrate this process is the action-phase model (Gollwitzer, Heckhausen, & Steller, 1990; Heckhausen & Gollwitzer, 1987), which dissects the process of goal pursuit into four phases: the predecisional phase, the postdecisional (or preactional) phase, the actional phase (i.e., the actual pursuit of the goal), and the postactional phase. Much effort has been devoted to examining the determinants and processes underlying the first three phases, during which goal pursuit behaviors are planned, deliberated upon, and executed (e.g., Bayuk, Janiszewski, & LeBoeuf, 2010; Carver & Scheier, 1998; Gollwitzer & Kinney, 1989; Higgins, 1987; Koo & Fishbach, 2008). For instance, Huang and Zhang (2013) found that having multiple ways (vs. just one way) to reach a goal motivates effort early on during the actional phase, but can be demotivating as people get near the end of this phase and approach goal attainment.

In contrast to rich findings on the first three phases, considerably less attention has been paid to exploring the complexity *after* a specific goal is attained—the postactional phase. On one hand, attainment of a goal is a positive and powerful experience, particularly when fueled by intrinsic interest (rather than introjected guilt or external compulsion), and can lead to enhanced positive emotional consequences, such as ego development and enhanced levels of well-being (Brunstein, 1993; Elliot, Sheldon, & Church, 1997; Sheldon & Kasser, 1998). On the other hand, because goals function as sources of perceptual readiness (Bruner, 1957; Goschke & Kuhl, 1993), goal attainment can also lead to disengagement of the behaviors aligned with the completed goal (e.g., Denzler, Förster, & Liberman, 2009; Förster et al., 2005; Liberman & Förster, 2000; Marsh, Hicks, & Bink, 1998); see also Lewin's field theory (Lewin, 1939) and the Zeigarnik effect (Kruglanski, Friedman, & Zeevi, 1971; Zeigarnik, 1938). For example, participants who achieved their goals in a word-creation game evaluated goal-relevant objects in a less approach-friendly (i.e., less positive) manner, compared with those who were still actively pursuing this goal (Ferguson & Bargh, 2004).

Although disengagement is important and functional for individuals, so they can allocate resources and effort across multiple goals (Kruglanski et al., 2002), it can be detrimental for long-term goal adherence and well-being if behaviors aligned with the achieved, specific goal are discontinued. For instance, an individual may set a specific goal to lose 10 pounds to be healthy (that is a more long-term and abstract goal in life). Upon achieving this 10-pound weight-loss goal, this person will have difficulty sustaining this new weight for lifelong health management if he completely disengages from the actions he took to achieve this goal (e.g., watching food intake or exercising). In this research, we

focus on behaviors that can benefit from this type of continuation (e.g., learning, exercising) and explore a potential mechanism by which goal-aligned behaviors can be sustained after the attainment of an original goal. We discuss other types of goal pursuit efforts that do not benefit from continuation (e.g., completing a goal of purchasing a house) in the General Discussion.

### A Solution: Sustaining Goal-Aligned Behaviors Through Accentuating Growth

What can increase the likelihood that people will continue goal-aligned behaviors after attaining their original goals? We draw from research in intrinsic motivation, endogenous-exogenous partition, and goal framing to posit that *accentuating the growth* (from the previous goal-unattained state into the present goal-attained state) can be key to sustaining goal-aligned behaviors.

People reengage in a behavior for two main reasons: their previous goal-directed activity is interrupted and, thus, the goal has not been completed (e.g., Kruglanski et al., 1971; Zeigarnik, 1938), or the activity is intrinsically motivating (e.g., deCharms, 1968; Fisher, 1978; Kasser & Ryan, 1993; Kruglanski, 1975; Ryan & Deci, 2000). In the latter case, people reengage in an activity because they find it enjoyable and appropriately challenging; this behavior hence is *an end in itself* and not just a means to an end (Kruglanski, 1975). Of note, these two reasons for reengagement are not necessarily mutually exclusive; for instance, recent research has shown that providing immediate rewards during goal pursuit (i.e., when the goal has not been completed) can help supply intrinsic motivation (Woolley & Fishbach, 2018).

More important, these two reasons can be motivating at different points during the goal pursuit. Prior research has shown that in the early stages of goal pursuit, looking back on accumulated progress is motivating, as it enhances the feeling that one is committed to these behaviors (Koo & Fishbach, 2008, 2012); in contrast, as people approach the finish line, looking forward to what is left to accomplish (i.e., the unfinished goal) becomes more motivating. However, what happens after a goal has been successfully attained? We posit that after a specific goal is attained, there is no longer a discrepancy to encourage goal-aligned behaviors; the alternative driver—treating a goal-aligned behavior as an end in itself—hence becomes critical. We further propose that one way to help people see a goal-aligned behavior as an end in itself is to have them look back and observe *how they have grown from the goal-unattained state in the beginning*, when they did not do this behavior, *into the present goal-attained state*, in which they do this behavior regularly.<sup>2</sup>

<sup>2</sup> The authors recognize that many constructs can correlate with this feeling of growth and simultaneously contribute to the hypothesized effect. To name a few, looking back on a completed goal can also increase the perceived instrumentality of goal-aligned behaviors, increase perceived effort or sunk cost, highlight the purpose behind goal-aligned behaviors, induce positive affect, or induce a feeling of empowerment. Our theorizing focuses on illuminating one of these mechanisms—accentuating how one has grown from the previous goal-unattained state into the present goal-attained state—and isolating its impact on sustaining goal-aligned behaviors. We include a content analysis in the General Discussion to shed light on other possible mechanisms at play, and encourage future research to explore these rich possibilities.

To illuminate this process, reconsider the example of attaining a 10-pound weight-loss goal. After achieving this weight-loss goal, if a person continues to focus on the remaining distance to the goal (that has become zero), she will not be motivated to keep on monitoring food intake or exercising. In contrast, by looking back on how she has grown from being a couch-potato who mindlessly ate into being a fit person who is now 10 pounds lighter, who eats mindfully and exercises regularly, she would be more likely to continue monitoring food intake and exercising, as these behaviors are now considered reflective of who she is and what she typically does (i.e., ends in themselves). Thus, the experience of personal growth constitutes a contributor to human motivation, over and above the satisfaction resulting from the achieved outcomes (deCharms, 1968; Fisher, 1978; Kasser & Ryan, 1993; Ryan & Deci, 2000).

Theorizing and testing how the growth one derives from an attained goal can motivate continuous goal-aligned behaviors further echoes classic growth mindset research (Dweck, 1986; Dweck & Leggett, 1988), which underscores how people are motivated to achieve and maintain growth. For instance, highlighting the possibility of growth can increase effort and improve performance for disadvantaged populations (Blackwell, Trzesniewski, & Dweck, 2007; Broda et al., 2018; Paunesku et al., 2015; Yeager & Walton, 2011); a recent meta-analysis has further shown that, contrary to the widespread conviction that growth comes from negative life events, positive life events can similarly induce a strong feeling of growth (Mangelsdorf, Eid, & Luhmann, 2019). In this research, we focus on one cognitive tool—conceptual metaphor—as an instrument to encourage people to look back on their completed goals to derive growth.

### Leveraging Metaphor to Derive Personal Growth

Metaphors make up a vital part of our daily language. Metaphoric expressions are uttered about six times per minute (Gibbs, 1994) and are comprehended quickly without much effort (Glucksberg & Keysar, 1990). Research in cognitive linguistics (Krishna & Schwarz, 2014; Lakoff & Johnson, 1980; Landau, Meier, & Keefer, 2010) suggests that people construe the world in large part through conceptual metaphors, which enable them to understand abstract concepts (i.e., target concepts) using knowledge of dissimilar yet more concrete concepts (i.e., source concepts). By building these mental associations, people can use pieces of knowledge about the source concept as a foundation for interpreting and evaluating information related to the target concept (Gibbs, 1994; Kövecses, 2010; Krishna & Schwarz, 2014; Lakoff & Johnson, 1980, 1999; Landau et al., 2010). For instance, people talk about concepts of social power metaphorically in terms of high vertical positions (e.g., “he reached the top of the corporate ladder”; Lakoff & Johnson, 1980) and, thus, when applying this metaphor in other contexts, are more accurate—for example, in judging a group’s social power when powerful groups are presented at the top of the screen and powerless groups at the bottom of the screen (Schubert, 2005).

Recently, researchers have identified a unique metaphoric expression often used to describe life situations, relationships, and, importantly, goal strivings: the metaphor of *a path* (e.g., “I am on the right *path*,” “get a good *start*,” “I see *where I need to go*”; Keefer et al., 2011; Lakoff, 1993; Lakoff & Johnson, 1999; Lan-

dau, Oyserman, Keefer, & Smith, 2014; Lee & Schwarz, 2014). The use of this metaphor enables individuals to see their lives as a continuous thread of progression and various options in life as different alternative paths leading to the ultimate destination (Landau et al., 2014; Milne, Kearins, & Walton, 2006).

We suspect that construing an achieved goal as a path one has just completed can help to accentuate the connection between one’s previous goal-unattained state and the current goal-attained state, changing the feeling of personal growth and, thus, encouraging the continuation of goal-aligned behaviors. We find supportive evidence for this notion from recent work on path metaphors. For instance, Keefer et al. (2011) tested the metaphor “life as a path” and found that the path metaphor (compared with literal representations) increased individuals’ perceived autobiographical continuity; a path metaphor also helped people more closely incorporate ups and downs along the path into their experience (Lee & Schwarz, 2014). Accordingly, Landau et al. (2014) used a path metaphor to enhance students’ perceived continuity between their present identity and their academic possible identity, increasing their engagement to reach this ideal self in the future.

More important, we further draw from process and outcome mental simulations research (e.g., Pham & Taylor, 1999; Taylor & Schneider, 1989) and posit that when people think about a goal pursuit as a path, there are actually two distinct constructs under this umbrella: (a) the journey aspect of the path (i.e., the process of goal pursuit) and (b) the destination aspect of the path (i.e., the outcome of goal pursuit).<sup>3</sup> When construing an achieved goal as a completed path, therefore, there are two separate aspects that one can focus on: the journey one took along this path, or the destination that one has now reached at the end of this path. For instance, for a person who has just completed a month-long boot camp, a path metaphor can induce thoughts regarding the journey that he took from first stepping into the class to where he is today. Alternatively, it can also induce thoughts about the destination—the fit body—he has just achieved. A path metaphor, therefore, could lead to distinct perceptions and behavioral consequences based on the person’s focus (journey vs. destination) when applying this metaphor.

We further theorize that people’s natural tendency is to view the attained goal as reaching a destination; this focus on having reached the end point of the path leads to their disengagement from goal-aligned behaviors, as there is no longer a discrepancy to drive them (Carver & Scheier, 1998; Heath, Larrick, & Wu, 1999; Zeigarnik, 1938). For instance, Krause and Freund (2014) found that focusing on the outcome of a goal pursuit can direct attention away from the means. Thinking about the boot camp one has just completed as a destination hence suggests that one has indeed arrived at the end point and that there is no other place that one needs to go. In contrast, shifting people’s focus to the journey aspect of this path could help to induce thoughts about where one started, what one went through, and what one has now achieved, highlighting the connection between the beginning of this path

<sup>3</sup> These two types of focus when applying a path metaphor can also be found in popular articles, e.g., “Success is a *journey*, not a *destination*” (by Arthur Ashe) and “The *journey* to achieve a goal is governed by the person you become along the way . . . and from the inner growth which takes place.” (<https://medium.com/the-mission/this-is-why-the-journey-towards-your-goals-matters-more-than-the-destination-46dd593e9611>).

(i.e., being unfit on the first day of the boot camp) and the goal one has attained at the end of this path (i.e., being fit at the end of the boot camp), which should heighten the feeling that one has indeed grown into this goal-attained state, propelling one to continue these goal-aligned behaviors (e.g., working out regularly).

Together, these theories suggest (but have not yet directly tested) the possibility that the feeling of personal growth can be induced through using a path metaphor, specifically, the journey rather than the destination of this path. In this light, we seek to add to the metaphor literature by differentiating the *journey* part of the path from the *destination* at the end of the path, and in so doing hope to add to the process-versus-outcome distinction in the research on the classic path metaphor. Critically, we suggest that this feeling of growth caused by construing the achieved goal as a completed journey can help to increase people's likelihood of continuing behaviors aligned with their attained goals, such as continuing to exercise, track food intake, and augment learning.

More formally, we hypothesize that using the path metaphor of a journey (vs. no metaphor or an alternative metaphor of a destination) to frame an attained goal leads to a greater likelihood of continuing behaviors aligned with this goal (Hypothesis 1, H1). Further, framing an attained goal with a journey metaphor (vs. no metaphor or an alternative metaphor of a destination) aids in deriving personal growth from the completed pursuit (Hypothesis 2, H2). Finally, we hypothesize that the effect of a journey metaphor on continuing goal-aligned behavior is mediated by the enhanced feeling of personal growth from the completed pursuit (Hypothesis 3, H3).

### Overview of Studies

Six studies tested our hypotheses. In Study 1, we used visual stimuli to test the effect of a journey metaphor (vs. a destination metaphor, and a no-metaphor control) among college students who had just completed an academic goal (H1).

In Study 2, we replicated the effect using linguistic metaphor stimuli and further enhanced the generalizability of this finding by testing a journey metaphor (vs. a destination metaphor, and a no-metaphor control) among adults who had recently attained a fitness goal, and captured their actual choice to partake in a free 1-month online fitness program to maintain their achieved fitness level.

In Studies 3 and 4, we launched a 7-day food diary program and a three-part learning program, respectively, and administered the metaphor practice right after goal attainment so as to standardize the goal pursuit process and also rule out the possibility that the effects observed were an artifact of recall error or selection bias. More critically, Studies 3 and 4 tested the proposed mechanism of personal growth (H2 and H3).

In Study 5, we launched a 14-day walking program in the field and implemented a journey or a destination metaphor, either when people were getting near the end (but had not yet attained the goal) or after they had reached a clear marker of goal attainment, so as to underscore the importance of comparing the goal-unattained state in the beginning with a clear goal-attained state.

Last, given the variability in self-perceptions, motivation, and behaviors across different cultures and populations (e.g., Chao, Visaria, Mukhopadhyay, & Dehejia, 2017; Chiao & Cheon, 2010; Henrich, Heine, & Norenzayan, 2010), Study 6 tested the effect of

a journey metaphor with executives in the African country of Ghana who had successfully attained a learning goal in an executive education program. This study documented the effect of a journey metaphor on sustaining good business practices 6 months after the intervention.<sup>4</sup>

### Study 1: Achieving an Academic Goal

Study 1 tested the effect of a journey metaphor on increasing the continuation of goal-aligned behaviors (H1) among college students who had recently attained an academic goal. First, we asked students to describe their goal attainment experience as well as the behaviors they had engaged in to complete this goal. We then randomly assigned them to either a journey metaphor, a destination metaphor, or a no-metaphor control condition to construe their goal attainment experience either as a completed journey, as having reached a destination, or without any metaphor (in a literal manner). Based on the method outlined in the research of metaphor framing (Landau, Sullivan, & Greenberg, 2009), when people think about a target concept (e.g., a goal attainment experience) through the lens of a source concept (e.g., a journey metaphor), they are more likely to produce evaluations of target-relevant information consistent with that source concept (i.e., they make a stronger connection between their previous goal-unattained state with the goal-attained state when thinking about it as a journey); importantly, these evaluations should differ from the evaluations one would have generated using an alternate source concept (e.g., a destination metaphor) or in a literal manner (using no metaphor at all). Students reported their desire (or lack of desire) to continue these goal-aligned behaviors. Two weeks later, we sent a follow-up survey so they could report how much effort they had indeed put into these goal-aligned behaviors over the 2-week period.

### Method

**Participants.** We aimed to recruit 210 college students (70 per condition) who had recently attained an academic goal in the fall (the survey was conducted in November). The recruitment message was posted at an online subject pool at a West Coast university and was described as a study about college students and their academic goals. The recruitment message specifically informed participants that they had to have recently attained an academic goal in the fall to be eligible to participate in the study; those who did not qualify would not be permitted to take the survey and would not be compensated for their time. A total of 210 college students (65.2% female, 34.8% male; mean age = 22.03,  $SD = 3.96$ ) completed the study. All participants received \$5 as compensation and were randomly assigned to one of three conditions, constituting a three-level (metaphor: journey, destination, and control) between-subjects design.

<sup>4</sup> Target sample sizes for each experiment were determined in advance of data collection based on consideration of participant availability, study design, and collection method (Simmons, Nelson, & Simonsohn, 2011). We reported all data exclusions, manipulations, and measures. Additional measures that were not discussed in the studies are listed in the [online supplemental material](#) for readers' reference. All procedures, stimuli, manipulation checks, and measures for newer studies (i.e., Studies 2, 4, and 5) were preregistered on *Open Science Framework* (<https://osf.io>) before data collection.

**Procedure.** Students were asked to write about one academic goal they had just attained in the fall, including what that academic goal was and how they knew that they had attained this goal. They also reported on a 100-point slider where they were right now on this goal (0 = *just started*; 20/40/60 = *early/middle/late stage working on this goal, respectively*; 80 = *just attained this goal*; and 100 = *already attained this goal; now working on maintaining my progress/status*). This slider served as our screener (an inclusion criterion); an average at or above 80 on the scale suggested that the subjects had indeed attained the original academic goal they described. Those who reported a number below 80 had not attained an academic goal in the fall, and, thus, were not permitted to participate in the study.

In addition, we asked students to report three behaviors they had engaged in to reach this academic goal, a question that was included (a) to ensure that all participants thought about their goal attainment experience both regarding the goal itself and the specific actions they took, (b) to keep the concreteness and specificity of the recall exercise constant, and (c) to gauge in a more relevant and personalized manner participants' intent to continue these behaviors (because what the participants typed here was embedded into later questions that measured their intent to continue goal-aligned behaviors).

Participants in the two metaphor conditions were asked to: "Please take a moment to think about this goal you just successfully attained. Please think about how this experience of attaining this goal is like completing a journey [reaching a destination]." Participants did this thought exercise while looking at a visual that depicted their goal attainment as a completed journey [a reached destination], with the word "journey [destination]" highlighted on the path [the end point of the path] accordingly (see Appendix A). Of note, we adopted the visuals from the conceptual metaphor literature (Keefer et al., 2011; Landau et al., 2014) to create our own visuals to describe goal attainment experiences. We pretested these visual stimuli to ensure that the journey metaphor indeed led to higher perceived connection between the previous goal-unattained state and the present goal-attained state.<sup>5</sup> Further, the time participants spent on writing was captured to ensure that neither the journey metaphor nor the destination metaphor led to greater involvement or effort. Following procedures from the metaphor literature (Keefer et al., 2011; Landau et al., 2014), participants in the control condition did not do any metaphor practice; they simply wrote in a literal manner about the academic goal they had attained.

After describing their goal attainment experience, students reported on three scales how likely they were to continue each of the three goal-aligned behaviors they reported earlier ("How likely are you to continue doing this: *text embedded from their earlier reported action #1, #2, and #3?*" 1 = *not at all* to 7 = *very likely*). To ensure that both metaphors generated clear and concrete images for participants, following the procedures in the pretest, we included three questions that tap mental imagery vividness ("How clear/detailed/concrete were the images in your mind?" 1 = *not at all* to 7 = *very much*), and three questions that tap mental imagery difficulty ("How clearly or vividly were you able to form a mental picture?" "How long did it take you to create a mental image?" "How easy was it to imagine this?"). Last, we included three items about the attributes of the goal, including perceived goal difficulty ("How difficult was it to attain this academic goal?" 1 = *not*

*difficult at all* to 7 = *very difficult*), goal importance ("How important was it to have attained this academic goal?" 1 = *not important at all* to 7 = *very important*), and the perceived amount of effort invested ("How hard did you work to attain this academic goal?" 1 = *not at all* to 7 = *very hard*). These questions were the same as those used in the pretest. The survey session ended with demographic questions.

Two weeks later, we sent out a follow-up survey asking participants to report how much effort during the previous 2 weeks they had actually put into these goal-aligned behaviors. Participants were first told to be honest when answering these questions, as their compensation depended only on the completion of the survey and not on the content or valence of their response. Then, they were asked how much effort they had put into each of the three behaviors they listed in the main survey session ("How much effort did you put into doing this in the past two weeks: *text embedded from their earlier reported action #1, #2, and #3 in the main survey?*" 1 = *not at all* to 7 = *a lot of effort*). In case participants engaged in other goal-aligned behaviors to maintain this desirable state, we also asked them to report more generally how much effort they had put into maintaining the academic success they had achieved ("How much time did you invest in the past 2 weeks to maintain your current status/success on this academic goal?" "How much effort did you invest in the past 2 weeks to maintain your current status/success on this academic goal?" "How hard did you work in the past 2 weeks to maintain your current status/success on this academic goal?" 1 = *not at all* to 7 = *a lot of time/a lot of effort/worked very hard*). These six items revealed high convergence (Cronbach's  $\alpha = .892$ ); thus, we averaged them to create a composite measure for participants' self-report of their effort after 2 weeks.

## Results and Discussion

### Goal-aligned behaviors at Time 1 (behavioral intent).

Based on our a priori hypothesis, we created two planned orthogonal contrast codes: a "Journey Metaphor" code (2, -1, -1) to compare the journey metaphor condition against the no-metaphor control and the alternative destination metaphor condition, and a "Metaphor Effect" code (0, -1, 1) controlling for the remaining difference between the control condition and the destination metaphor condition. By comparing the journey metaphor against an alternative metaphor and a no-metaphor control simultaneously through orthogonal contrast

<sup>5</sup> A pilot test among 301 Mturkers (53.5% female, 46.5% male; mean age = 31.71,  $SD = 10.54$ ) verified that applying the journey metaphor stimulus to a goal attainment experience (either fitness or learning) led to higher perceived connection between the previous goal-unattained state and the present goal-attained state ( $M = 5.80$ ,  $SD = .84$ ), compared with having no metaphor at all ( $M = 5.52$ ,  $SD = 1.05$ ) and using a destination metaphor ( $M = 5.47$ ,  $SD = 1.00$ ),  $t(298) = 2.62$ ,  $p = .009$ ; the latter two groups were not significantly different from each other,  $t(298) = -.38$ , *ns*. There was no significant difference in perceived goal difficulty, goal importance, goal attainment effort, BIF (construal level), or mood (except for how proud participants felt: Those in the control condition felt prouder than did those in the destination condition ( $M = 10.39$ ,  $SD = 2.31$  vs.  $M = 9.39$ ,  $SD = 3.18$ ),  $t(298) = -2.58$ ,  $p = .01$ ). See Appendix B for the full statistical report of these measures. The recruitment message for the pilot test was similar to those used in the main study, specifically informing participants that they had to have recently attained a fitness or a learning goal in the fall to be eligible to participate in the study; the same 100-point slider was used as a screener for the pilot test.

analyses, we could cleanly isolate the unique effect of the journey metaphor while accounting for any additional (either enhancing or opposing) effect that may have occurred by merely applying a metaphor to the goal attainment experience.

The analyses on the intent to continue goal-aligned behaviors (composite measure of the three intent items; Cronbach's  $\alpha = .617$ ) revealed supportive evidence for H1. When participants were guided to describe the academic goal they had just achieved as a completed journey, they were more likely to intend to continue their goal-aligned behaviors ( $M = 5.86$ ,  $SD = 1.18$ ) than those using a destination metaphor ( $M = 5.38$ ,  $SD = 1.16$ ) and those in the control condition ( $M = 5.49$ ,  $SD = 1.43$ ),  $t(207) = 2.28$ ,  $p = .024$ ; the latter two conditions were not significantly different,  $t(207) = -.51$ , *ns*.

To be comprehensive, we also tested an alternative set of planned orthogonal contrast codes: a "Metaphor" code ( $-1, 2, -1$ ) comparing the no-metaphor control against the two metaphor conditions, and a "Journey" code ( $1, 0, -1$ ) comparing the journey metaphor against the destination metaphor condition. Simply using a metaphor did not affect behavioral intent,  $t(207) = -.70$ , *ns*; it was the use of the journey (vs. destination) metaphor that led to greater intent to continue goal-aligned behaviors,  $t(207) = 2.23$ ,  $p = .027$ .

**Goal-aligned behaviors at Time 2 (self-reports of 2-week effort).** A follow-up survey on participants' goal-aligned behaviors 2 weeks later revealed patterns consistent with their reported intent in the lab. The analysis on the composite measure of the six behavior questions (Cronbach's  $\alpha = .892$ ) showed that participants were more likely to continue goal-aligned behaviors in the journey metaphor condition ( $M = 5.80$ ,  $SD = 2.32$ ) than in the destination metaphor ( $M = 5.02$ ,  $SD = 2.15$ ) and the control conditions ( $M = 5.27$ ,  $SD = 1.79$ ),  $t(183) = 2.00$ ,  $p = .047$ ; the latter two conditions were not significantly different,  $t(183) = -.65$ , *ns*. Results were consistent using the alternative set of orthogonal contrast codes as well: Simply using a metaphor did not affect their behaviors after 2 weeks,  $t(183) = -.45$ , *ns*; it was the use of the journey (vs. destination) metaphor that led to greater goal-aligned behaviors,  $t(183) = 2.06$ ,  $p = .041$ .

**All other variables.** Among all the other measured variables, we found a difference only in how clear the mental images were ( $M_{\text{journey}} = 5.30$ ,  $SD = 1.42$  vs.  $M_{\text{destination}} = 4.79$ ,  $SD = 1.26$  vs.  $M_{\text{control}} = 5.31$ ,  $SD = 1.48$ ),  $F(2, 207) = 3.29$ ,  $p < .05$ . However, importantly, clarity did not mediate the hypothesized effect and did not appear again in other studies, and there was no significant difference in how concrete, vivid, effortful, or easy it was for students to create these images in their heads,  $ps > .10$ . There was also no difference in how long participants spent on writing, or any difference in perceived goal difficulty or goal importance. See [Appendix B](#) for a complete statistical report on these measures.

Study 1 provided preliminary support for our key hypothesis, that construing an achieved goal as a completed journey increased people's likelihood of continuing goal-aligned behaviors, both in college students' immediate intent to continue and in their reported behaviors 2 weeks later (H1). Those who did not use any metaphor behaved similarly to those using a destination metaphor, suggesting that the natural tendency upon goal attainment is to think about it as having reached the destination.

To build on the results of Study 1, Study 2 had three objectives. First, we aimed to replicate the hypothesized effect (H1) using a different format of metaphors (linguistic instead of visual metaphors) to establish robustness. Second, we relied on a different

group of goal pursuers (adults who had recently completed a fitness goal) for generalizability of the observed effect. Third, we tested the effect of metaphors on people's choice to participate in a free 1-month program, either for comedy relief or to remain fit, so as to extend beyond the self-report measures used in Study 1.

## Study 2: Attaining a Fitness Goal

Study 2 tested the effect of a journey metaphor on adults who had recently completed a fitness goal (H1). First, we asked participants to describe their goal attainment experience as well as the behaviors they had engaged in to complete this goal, and then randomly assigned them to a journey linguistic metaphor, a destination linguistic metaphor, or a no-metaphor control condition to construe their goal attainment experience. Participants were offered a free 1-month program to partake in; they could choose either a stress-reducing entertainment program or a program for maintaining their fitness level.

### Method

**Participants.** We aimed to recruit 210 adults (70 per condition) who had attained a fitness goal recently. The recruitment message was posted on Amazon Mechanical Turk (MTurk), and was described as a study about fitness goals. The recruitment message specifically informed participants that they had to have recently attained a fitness goal in 2017 (the study was conducted in May of 2018) to be eligible to participate in the study; those who did not qualify would not be permitted to take the survey and would not be compensated for their time. A total of 214 adults (53.7% female, 46.3% male; mean age = 34.57,  $SD = 12.07$ ; mean weight = 160.60 pounds,  $SD = 41.27$ ) completed the study. All participants received \$3 as compensation and were randomly assigned to one of the three conditions, constituting a 3 (metaphor: journey, destination, and control) between-subjects design.

**Procedure.** Following the procedures in Study 1, participants were asked to write about one fitness goal they had recently attained in 2017, including what that fitness goal was and how they knew that they had attained this goal. They also reported on a 100-point slider where they were right now on this goal (0 = *just started*; 20/40/60 = *early/middle/later stage working on this goal, respectively*; 80 = *just attained this goal*; and 100 = *already attained this goal; now working on maintaining my progress/status*). This slider again served as our screener; an average at or above 80 suggested that the subjects had indeed attained the fitness goal they described. Those who reported a number below 80 had not attained a fitness goal in 2017 and, thus, were not permitted to participate in the study.<sup>6</sup> Participants also reported three behaviors they had engaged in to reach this fitness goal, to keep constant the concreteness and specificity of the recall effort.

Participants in the two metaphor conditions were then asked to focus on how this experience was like completing a journey [reaching a destination]: "Please take a moment to think about this goal you just successfully attained. Please think about how this experience of attaining this goal is like completing a journey [reaching a destination]. To illustrate, a journey is completed [a

<sup>6</sup> To prevent complaints on MTurk forums, which would then reveal the purpose of the study or the screener, we paid these subjects \$0.1 for taking the screener questions.

destination is reached], because of the steps you took along this path." Each instruction appeared on the screen after 20 seconds to ensure that participants indeed went through the metaphor practice as intended. Similar to Study 1, we pretested the linguistic stimuli.<sup>7</sup> The time participants spent on writing was again captured to ensure that neither the journey metaphor nor the destination metaphor led to greater involvement or effort than the opposite metaphor. Following procedures from the metaphor literature (Keefe et al., 2011; Landau et al., 2014), participants in the control condition again did not do any metaphor practice; they simply wrote in a literal manner about the fitness goal they had attained.

After describing their goal attainment experience, participants read: "We have recently partnered with a health and wellness company that has developed two new online programs. So, as a bonus for participating in this survey (in addition to your regular payment), we are offering you free, no strings attached, 1-month unlimited access to one of these new online programs: **an in-home fitness program or a comedic relief program.**" Then, participants read a description of the two programs (see Appendix C), indicated their choice of program on a 6-point scale item (1 = *very interested in the comedy program* to 6 = *very interested in the fitness program*; scale anchors were counterbalanced), and read that they would receive log-in information for accessing the program that they were more interested in. Last, we included the same metaphor imagery vividness, difficulty, and goal attribute items as in Study 1. The survey session ended with demographic questions and a debriefing session.

## Results and Discussion

**Choice of 1-month program.** Following the procedures in Study 1 (and as preregistered on OSF), we analyzed the data using the two planned orthogonal contrast codes: a "Journey Metaphor" code (2, -1, -1) to compare the journey metaphor condition against the no-metaphor control and the alternative destination metaphor condition, and a "Metaphor Effect" code (0, -1, 1) controlling for the remaining difference between the control condition and the destination metaphor condition. The analyses on the choice of the free 1-month program revealed supportive evidence for H1. When participants were guided to describe the fitness goal they had recently achieved as a completed journey, they were more likely to choose the fitness program, which would help maintain their fitness level ( $M = 4.96$ ,  $SD = 1.14$ ) than those using a destination metaphor ( $M = 4.19$ ,  $SD = 1.61$ ) and those in the control condition ( $M = 4.04$ ,  $SD = 1.55$ ),  $t(211) = 3.96$ ,  $p < .001$ ; the latter two conditions were not significantly different,  $t(211) = .62$ , *ns*. The alternative set of orthogonal contrast codes revealed consistent results: Using a metaphor increased the likelihood that participants would choose the fitness program,  $t(211) = -2.57$ ,  $p = .011$ ; importantly, this increase came from the journey metaphor, such that the journey (vs. destination) metaphor led to a greater likelihood of choosing the fitness program to help the participants remain fit,  $t(211) = 3.10$ ,  $p = .002$ .

**All other variables.** Among all the other measured variables, we found a difference only in how important the attained goal was, such that those in the destination metaphor condition perceived the goal to be more important than those in the no-metaphor control ( $M_{\text{destination}} = 6.38$ ,  $SD = 1.02$  vs.  $M_{\text{control}} = 6.00$ ,  $SD = 1.18$ ),  $t(211) = -2.18$ ,  $p = .030$ . There was no significant difference in

how detailed, concrete, vivid, effortful, or easy it was for participants to create these images in their heads,  $ps > .10$ . There was also no difference in how long participants spent on writing, or any difference in perceived goal difficulty or effort invested. See Appendix B for a complete statistical report on these measures.

Study 2 provided additional support for our key hypothesis, that construing an achieved goal as a completed journey increases people's likelihood of making goal-aligned choices, in this case, leading people to choose a free 1-month fitness program to help them remain fit (H1). Those who did not use any metaphor again behaved similarly to those using a destination metaphor, suggesting that the natural tendency upon attaining the original goal is to view it as having reached the destination.

Based on our theory, construing an achieved goal as a completed journey increases behaviors and choices aligned with the attained goal because it heightens the feeling that one has grown from the goal-unattained state at the beginning into the present goal-attained state (H1–H3). Note, this proposed process is distinct from, and complements, the mechanism documented in prior research that accounts for the effect of a path metaphor on people's engagement with reaching their ideal future identity. Landau et al. (2014) drew from mental contrasting theory (Oettingen, 2012; Oettingen & Mayer, 2002; Oettingen, Pak, & Schnetter, 2001; Oettingen & Schwörer, 2013) and showed that the path metaphor leads to a greater continuity between people's present self/identity and their future ideal identities. Using a path metaphor helps to alleviate procedural uncertainty (i.e., how to attain these future identities), leading to greater motivation to initiate these pursuits. In comparison, we posit that when a goal has already been attained, the uncertainty about how to attain this goal is no longer relevant; by using a journey metaphor to look back and see the connection between one's previous goal-unattained state and the current goal-attained state, one can more clearly observe how one has grown into the current state, which fuels continuous goal-aligned behaviors. Therefore, applying a journey metaphor to view a future ideal self can motivate goal initiation efforts, whereas applying a journey metaphor to view one's past achieved goal can motivate continuous strivings; importantly, these two motivating effects from the journey metaphor occur through distinct mechanisms.

The next two studies put this hypothesis to the test: Study 3 captured the perception of personal growth by launching an experimenter-controlled, 7-day food diary program to encourage healthy and mindful eating to meet a calorie goal—a behavior that can benefit from continuation after original goal attainment. Study

<sup>7</sup> A pilot test among 307 MTurkers (50.2% female, 49.8% male; mean age = 34.68,  $SD = 11.75$ ) verified that applying the journey metaphor stimulus to a goal attainment experience (either fitness or learning) led to higher perceived connection between the previous goal-unattained state and the present goal-attained state ( $M = 5.76$ ,  $SD = .95$ ), compared with not using a metaphor at all ( $M = 5.56$ ,  $SD = 1.02$ ) and using a destination metaphor ( $M = 5.44$ ,  $SD = 1.24$ ),  $t(304) = 2.01$ ,  $p = .045$ ; the latter two groups were not significantly different,  $t(304) = -.81$ , *ns*. There was no significant difference among the conditions in mental imagery vividness and difficulty, perceived goal difficulty, goal importance, and effort invested. See Appendix B for the full statistical report of these measures. The recruitment message for this pilot test was similar to those used in the pilot test of Study 1, specifically informing participants that they had to have recently attained a fitness or a learning goal to be eligible to participate in the study; the same 100-point slider was included as a screener.

4 used an online financial education program and administered metaphor practices among people who had not yet initiated the program versus those who had just successfully completed the program, to further capture and contrast the unique driving mechanisms (identity continuity vs. growth) in these distinct goal pursuit phases.

### Study 3: The Driving Role of Personal Growth in a Food Diary Program

In Study 3, we launched a 7-day food diary program and manipulated the metaphor practice that dieters went through after attaining their dieting goal in the program (journey, destination, and no-metaphor control; H1). Further, we measured dieters' perception of personal growth from the completed pursuit (H2, H3) to explore its potential mediating effect on their reported intent to continue goal-aligned behaviors.

#### Method

**Participants.** Drawing on prior research showing gender differences in dieting goals (Bergstrom & Neighbors, 2006; Burger et al., 2010; Fishbach & Dhar, 2005; Fishbach, Friedman, & Kruglanski, 2003), we focused on female participants in this study. The recruitment message was posted at an online subject pool at a West Coast university and was described as a study for females who are interested in participating in a food diary program designed by the lab; the advertisement for the study stated: "This is a program that helps you eat healthier. You'll use a food diary app for a week, and report your feelings and thoughts about it." To mimic real-world practice, in which people initiate goal pursuits that they care about and have a high desire to attain, we did not compensate participants for joining the food diary program; people signed up because they wanted to monitor food intake.

To ensure that we could obtain 200–300 completes for analysis, we kept the recruitment open for 3 weeks, during which 431 female staff members and students inquired about the program and took the introductory survey. Among them, 72 did not start the program at all (failed to download the app or complete the introductory survey), and 94 started but dropped out during the program, leaving us with a final sample of 265 female staff members and students who took the introductory survey and completed the program (mean age = 31.39,  $SD = 12.22$ ; mean weight = 154.36 pounds,  $SD = 46.01$ ). These participants were randomly assigned to one of the three conditions once they had completed their calorie-tracking goals in the program, constituting a three-level (metaphor: journey, destination, and control) between-subjects design.

**Procedure.** Participants who were interested in the food diary program first took an introductory survey, where they provided their age, gender, past and current usage of food/calorie trackers. Participants followed our instructions to download and create an account on MyFitnessPal mobile app, joined a members-only group set up by our lab, and uploaded a screenshot of their app profile for our record. They then used the MyFitnessPal mobile app's proprietary algorithm to calculate their calorie goal for the week. The mean of the calorie goal for the week was 11,252.43 calories ( $SD = 7388.71$ ). A total of 137 participants had used a food/calorie tracker before, and 38 were currently using a food/

calorie tracker when they signed up; these participants were instructed to stop using their tracker and use the mobile app offered by the lab for the duration of the program. Participants also reported how important it was for them to achieve this calorie goal (1 = *not at all important* to 7 = *extremely important*) and how difficult they perceived it would be (1 = *not at all difficult* to 7 = *extremely difficult*). There was no difference in participants' baseline perceived goal importance and goal difficulty.

Participants then reported the number of calories they consumed in our members-only group through the mobile app. Once they successfully tracked their food consumption for 7 days and stayed within 10% deviation of their calorie goal for the week (that was the goal of the program specified in the introduction survey), participants then received a Goal Attainment Exit Survey; to incentivize all participants in the food diary program to complete this exit survey (in which we administered the metaphor manipulations), we paid them \$5 upon the completion of the exit survey. The exit survey administered the metaphor practice using the visual stimuli from Study 1: Participants were asked to think about how this experience was like completing a journey [reaching a destination], while looking at a visual that depicted their goal attainment as a completed journey [a reached destination], with a focus on the journey portion of the visual [the destination point of this visual]. Similar to the past studies, participants in the control condition did not do any metaphor practice.

After describing their goal attainment experience, participants reported their intent to continue goal-aligned behaviors on four items: "How much time do you plan on putting into tracking your food intake every day, after the program?" (1 = *no time at all* to 7 = *a great deal of time*), "How much effort do you plan on putting into tracking your food intake every day, after the program?" (1 = *no effort at all* to 7 = *a great deal of effort*), "At this moment, how hard are you planning to work to continue meeting your weekly calorie target after the program?" (1 = *not hard at all* to 7 = *extremely hard*), "At this moment, how motivated do you think you are to continue meeting your weekly calorie target after the program?" (1 = *not motivated at all* to 7 = *extremely motivated*). These four items revealed high convergence (Cronbach's  $\alpha = .909$ ), hence were averaged to form a composite index for participants' intent to continue goal-aligned behaviors.

Then participants answered questions to assess the potential underlying processes. First, we created a three-item personal growth index (adapted from Deci & Ryan, 2000; Dweck, 1986; Dweck & Leggett, 1988; Kasser & Ryan, 1993; Ryan & Deci, 2000; see also Broda et al., 2018; Paunesku et al., 2015; Yeager & Walton, 2011), in which participants were asked: "Regarding the food diary program you just completed, how much personal growth do you feel you could derive from achieving this calorie goal?" (1 = *no growth at all* to 7 = *a lot of growth*), "How much learning do you feel you could derive from achieving this calorie goal?" (1 = *no learning at all* to 7 = *a lot of learning*), "How much personal change do you feel you could derive from achieving this calorie goal?" (1 = *no change at all* to 7 = *a lot of change*). Because these three items revealed high convergence (Cronbach's  $\alpha = .899$ ), we averaged them to form an index of personal growth.

Second, to empirically tease apart the proposed mechanism of personal growth from identity continuity, we adapted the identity measures from Landau et al. (2014, Study 4) whereby participants

first were asked to picture their present self, and another temporally different self (in our case, the past self), and to keep these two identity images in mind. Participants then reported how these two identities were related on five Likert scales ("Today Me feels like a natural part of Pre-program Me," "I can easily see how Pre-program Me can become Today Me," "Becoming Today Me begins with Pre-program Me," "I do not feel a strong connection between Today Me and Pre-program Me (reverse-coded)," "I feel a strong connection between Today Me and Pre-program Me," 1 = *strongly disagree* to 7 = *strongly agree*). These items revealed high convergence (Cronbach's  $\alpha = .729$ ), which we averaged to form an index of identity continuity. The items of personal growth and identity continuity were presented in random order, along with our typical measures of goal attributes (perceived goal difficulty and goal importance).

## Results and Discussion

**Goal-aligned behaviors (behavioral intent).** To test the effect of the journey metaphor on goal-aligned behaviors, we used the same two planned orthogonal contrast codes as in previous studies. The analyses on the intent to continue goal-aligned behaviors again revealed supportive evidence for H1. When participants construed the attained dieting goal as a completed journey, they reported they were more likely to continue goal-aligned behaviors ( $M = 5.01$ ,  $SD = 1.43$ ) than were those using a destination metaphor ( $M = 4.57$ ,  $SD = 1.41$ ) and those in the control condition ( $M = 4.33$ ,  $SD = 1.58$ ),  $t(262) = 2.93$ ,  $p = .004$ ; the latter two conditions were not significantly different,  $t(262) = 1.04$ , *ns*.

**Personal growth and identity continuity.** We then analyzed the possible mediators of personal growth and identity continuity. When the dieters were guided to use a journey metaphor to describe their attained dieting goal, they derived greater personal growth from the completed pursuit ( $M = 5.07$ ,  $SD = 1.28$ ) than did those using a destination metaphor ( $M = 4.54$ ,  $SD = 1.46$ ) and those in the control condition ( $M = 4.40$ ,  $SD = 1.57$ ),  $t(262) = 3.20$ ,  $p = .002$ ; the latter two conditions were not significantly different,  $t(262) = .63$ , *ns*. This finding landed support for H2. In contrast, there was no significant difference in identity continuity among the three conditions ( $M_{\text{journey}} = 5.36$ ,  $SD = 1.02$  vs.  $M_{\text{destination}} = 5.45$ ,  $SD = .94$  vs.  $M_{\text{control}} = 5.28$ ,  $SD = 1.18$ ),  $t(262) = -.01$ , *ns*.<sup>8</sup>

**Mediation model.** We conducted a mediation analysis (Hayes, 2013) with 5,000 bootstrap resamples to test whether the relationship between the journey metaphor and the goal-aligned behavioral intent was mediated by the personal growth that participants derived from the completed pursuit (H3) or by identity continuity, entered as simultaneous mediators in the model. The results verified that the use of a journey metaphor (vs. a destination metaphor or no metaphor) led to a greater sense of personal growth,  $B = .20$ ,  $t(262) = 3.20$ ,  $p = .002$  (95% confidence interval, CI [.0772 to .3246]), which led to greater intent to continue goal-aligned behaviors,  $B = .70$ ,  $t(260) = 14.83$ ,  $p < .001$  (95% CI [.6096 to .7963]). In contrast, the use of a journey metaphor (vs. a destination metaphor or no metaphor) did not lead to greater identity continuity with a past self-image,  $B = -.0006$ ,  $t(262) = -.01$ , *ns* (95% CI [-.0907 to .0895]), which did not affect participants' intent to continue goal-aligned behaviors,  $B =$

.04,  $t(260) = .65$ , *ns* (95% CI [-.0861 to .1701]). The mediational path was significant for personal growth, Index = .1412 (95% CI [.0599 to .2235]), and not for identity continuity, Index = .0000 (95% CI [-.0070 to .0087]).

Study 3 provided additional support for the hypothesis that the use of a journey metaphor led to a greater intent to continue goal-aligned behaviors, in this case, intent to continue tracking food intake after completing a weeklong food diary program (H1). Further, as hypothesized, perceptions of personal growth accounted for the effect of the journey metaphor after people had successfully completed the food diary program (H2, H3). However, limitations still remain in this study, most notably a focus on behavioral intent (rather than actual behavior). In addition, we aim to provide further conceptual distinction between the mechanisms that drive goal initiation versus post-goal-attainment behaviors, to connect our findings with extant work showing the effect of a path metaphor on goal pursuit efforts by enhancing the perceived continuity to an ideal future identity (Landau et al., 2014).

## Study 4: The Temporal Specificity of Personal Growth

In Study 4, we aimed to further capture and contrast the unique driving mechanisms in two goal pursuit phases: before goal initiation and after goal attainment. To do so, we tested the effect of a journey metaphor among college students who went through an online financial education program and, thus, had just completed a financial learning goal (H1), compared with college students from the same pool who had not yet started pursuing this goal. Thus, participants first described their goal attainment experience [the goal they were about to initiate] as well as the behaviors they engaged in [would engage in] to complete this financial education program. Then, we randomly assigned them to either a journey metaphor or a destination metaphor condition, using a linguistic metaphor stimulus so as to enhance the generalizability of the mediational patterns observed in Study 3. Last, to complement the self-report measures used in Study 3, we captured students' actual study time as a proxy for their goal-aligned behavior.

## Method

**Participants.** We aimed to recruit 400 college students, 200 who went through our financial education program and 200 who were about to begin this program. The recruitment message was posted at an online subject pool called Lucid and was described as a study on financial education for college students. This subject pool (Lucid Managed Services) helped us ensure that the participants recruited were indeed college students and, thus, were qualified to participate. These qualified subjects further read the ad-

<sup>8</sup> It is worth noting that although the journey metaphor induced the feeling of personal growth from the completed pursuit, it did not make people feel more integrated with their past self-image/identity. This interestingly echoes recent findings that people anticipate, and embrace, change for the better over time (e.g., Busseri, Choma, & Sadava, 2009; Newby-Clark & Ross, 2003), especially when those changes are congruent with their expectations and desires (Molouki & Bartels, 2017). As a result, people may be less willing to recognize (or observe) identity continuity with an undesirable self-image/identity in the past, and instead would be more willing to recognize how they have grown into the present desirable state. We will return to this possibility in the General Discussion.

vertisement of the study: “In this study, we will ask you to participate in a learning program. Specifically, in this learning program, you will watch a series of short, online classes about investment and financial decision making.” Those who were interested then entered the study.

A total of 401 students (74.6% female, 25.4% male; mean age = 20.50,  $SD = 3.95$ ) participated in the study. Among these students, 147 reported currently having a part-time job, 41 had a full-time job, 184 had a monthly stipend from parents, and 184 had scholarships from schools. All participants received \$3 as compensation and were randomly assigned to one of the two metaphor conditions, constituting a 2 (metaphor: journey vs. destination)  $\times$  2 (goal phase: initiation vs. attained) between-subjects design.

**Procedure.** Participants first read that they would participate in an online financial education program in which they would watch a series of three short online classes about investment and financial decision making. Those in the goal-attained conditions began by watching these three classes, one by one, on their computer. The class materials were designed to help college students get familiarized with investment terminologies and investment portfolio management and took 35 min to complete. Those in the goal-initiation conditions did not watch the classes until after they had completed the other parts of our study.

Next, participants were asked to write about the financial learning goal they had just attained [were about to start]. To ensure that participants who completed the goal [were about to start] indeed recognized that they had completed this learning goal [had not yet started working on this learning goal], we followed prior procedures and asked participants to report on the same 100-point slider where they were right now on this goal (0 = *just started the learning program*; 20/40/60 = *early/middle/late stage (Part 1/2/3) of the learning program*; 80 = *just completed the 3-part learning program*; and 100 = *already attained this goal (3-part online learning program)*; now working on maintaining my progress/status); those who reported a number below 80 in the goal-attained condition [those who reported a number above 20 in the goal-initiation condition] felt that they did not complete [felt that they had already initiated] the learning program and, thus, were not permitted to participate in the survey, in which we implemented metaphor manipulations. Following prior procedures, we also asked participants to report three behaviors they had engaged in [would engage in] to attain this financial learning goal, to ensure that all participants thought about their goals and specific behaviors, to keep the concreteness and specificity of the exercise constant.

Similar to prior studies, participants were asked to take a moment to think about this goal and write about this experience (i.e., recalling the financial education program they had just completed in the goal-attained conditions; imagining the financial education program they were about to start in the goal-initiation conditions) under the guidance of the linguistic metaphors from Study 2. The time participants spent on writing was again captured.

After metaphor practice, participants were provided with an opportunity to learn more about financial decision making, specifically, how to save money to invest while in college. This opportunity was separated from the online education program and discussed the specific behaviors college students can take to save money for investment, such as cutting costs on transportation, housing, and health care. We emphasized that reading these finan-

cial tips was completely optional, and participants could spend as much or as little time as they wanted reading these tips (see sample tips used in the study in Appendix D). We measured the time participants spent on studying these tips as a proxy for their goal-aligned behavior—to continue learning about investing while in college.

Then, participants answered the same set of mechanism questions as in Study 3 to assess the underlying processes. Specifically, participants reported through three questions how much personal growth they derived [would derive] in the goal-attained [goal-initiation] conditions: “How much personal growth do you feel you could [will] derive from achieving this goal?” (1 = *no growth at all* to 7 = *a lot of growth*) “How much learning do you feel you could [will] derive from achieving this goal?” (1 = *no learning at all* to 7 = *a lot of learning*) “How much personal change do you feel you could [will] derive from achieving this goal?” (1 = *no change at all* to 7 = *a lot of change*). These items again revealed high convergence (Cronbach’s  $\alpha = .911$ ), and were averaged to form a composite measure for personal growth. As for identity continuity measures, participants pictured their present self, and another temporally different self, based on the condition they were in; that is, those in the goal-attained conditions pictured their past self (same as in Study 3) and those in the goal-initiation conditions pictured their future self (same as in Landau et al., 2014). Participants were asked to keep these two identity images in mind, and report how these two identities were related on the same five Likert scales used in Study 3. These items revealed satisfactory convergence (Cronbach’s  $\alpha = .678$ ), which we averaged to form an index of identity continuity. The session ended with demographic questions. Those in the goal-initiation conditions then went through the three online classes, to retain the credibility of the cover story.

## Results and Discussion

**Time spent studying optional financial tips.** An ANOVA of metaphor, goal phase, and their interaction term on the time participants spent on studying the optional financial tips revealed a main effect of goal phase,  $F(1, 397) = 5.04, p = .025, \eta^2 = .013$ , such that participants who had not started the financial learning program spent more time studying these optional tips ( $M = 126.49$  s,  $SD = 150.81$ ) than those who had just completed the learning program ( $M = 96.74$  s,  $SD = 122.27$ ). More important, there was also a hypothesized main effect of metaphor,  $F(1, 397) = 22.59, p < .001, \eta^2 = .054$ , such that participants who were guided to use a journey metaphor spent more time studying these optional tips ( $M = 141.95$  s,  $SD = 149.18$ ) than those using a destination metaphor ( $M = 78.80$  s,  $SD = 115.25$ ). As hypothesized, the Metaphor  $\times$  Goal Phase interaction was not significant,  $F(1, 397) = .001, p = .970, \eta^2 = .000$ , suggesting that the journey metaphor could similarly increase people’s desire to conduct goal-aligned behaviors for those who had attained their original goals (our H1) and for those who were about to initiate such a pursuit (Landau et al., 2014).

**Personal growth and identity continuity.** We then analyzed the possible mediators of personal growth and identity continuity. The analysis of variance (ANOVA) of metaphor, goal phase, and their interaction term on personal growth revealed a main effect of goal phase,  $F(1, 397) = 44.29, p < .001, \eta^2 = .100$ , such that

participants who had not started the financial learning program anticipated greater growth ( $M = 5.30, SD = 1.25$ ) than those who had just completed the learning program ( $M = 4.38, SD = 1.74$ ). There was also a main effect of metaphor,  $F(1, 397) = 49.21, p < .001, \eta^2 = .110$ , such that participants who were guided to use a journey metaphor reported greater personal growth ( $M = 5.32, SD = 1.33$ ) than those using a destination metaphor ( $M = 4.29, SD = 1.68$ ). The Metaphor  $\times$  Goal Phase interaction was also significant,  $F(1, 397) = 34.58, p < .001, \eta^2 = .080$ . As hypothesized, the difference in personal growth between the two metaphor conditions was significant in goal-attained conditions ( $H2: M_{\text{journey}} = 5.27, SD = 1.44$  vs.  $M_{\text{destination}} = 3.48, SD = 1.54$ ),  $t(212) = -8.75, p < .001$ , but not in goal-initiation conditions ( $M_{\text{journey}} = 5.38, SD = 1.18$  vs.  $M_{\text{destination}} = 5.22, SD = 1.31$ ),  $t(185) = -.86, p = .390$ .

The ANOVA of metaphor, goal phase, and their interaction term on identity continuity revealed a Metaphor  $\times$  Goal Phase interaction,  $F(1, 397) = 4.70, p = .031, \eta^2 = .012$ , with no main effects. As hypothesized, the difference in identity continuity between the two metaphor conditions was significant in goal-initiation conditions ( $M_{\text{journey}} = 5.09, SD = .95$  vs.  $M_{\text{destination}} = 4.78, SD = .99$ ),  $t(185) = -2.21, p = .029$ , but not in goal-attained conditions ( $M_{\text{journey}} = 4.72, SD = .91$  vs.  $M_{\text{destination}} = 4.82, SD = .99$ ),  $t(212) = .80, p = .425$ .

**Mediation model.** Next, we followed the procedures in Study 3 to conduct two mediation analyses (Hayes, 2013), one among goal-attained participants and another among goal-initiation participants, to empirically tease apart the driving force in each phase. The mediation models generated 5,000 bootstrap resamples to test whether the relationship between the journey metaphor and the goal-aligned behaviors was mediated by personal growth (H3) and by identity continuity (Landau et al., 2014), both entered as simultaneous mediators in the model.

Among individuals who had completed the financial education program, the use of a journey metaphor (vs. a destination metaphor) led to a greater sense of personal growth,  $B = .89, t(212) = 8.75, p < .001$  (95% CI [.6925 to 1.0949]), which led to greater time spent on studying the optional finance tips,  $B = 46.10, t(210) = 9.90, p < .001$  (95% CI [36.9224 to 55.2732]). Consistent with the findings in Study 3, the mediational path through personal growth was significant, Index = 41.20 (95% CI [28.2039 to 57.2856]), whereas the mediational path through identity continuity (with the past self) was not, Index = .08 (95% CI [-.8998 to 1.3419]).

Among individuals who had not started the financial education program, the use of a journey metaphor (vs. a destination metaphor) led to a greater sense of continuity between the desirable future identity and the present identity,  $B = .16, t(185) = 2.21, p = .029$  (95% CI [.0166 to .2964]), which led to greater time spent studying the optional finance tips,  $B = 46.41, t(183) = 4.17, p < .001$  (95% CI [24.4507 to 68.3711]). Replicating the findings in Landau et al. (2014), the mediational path through identity continuity (with the future self) was significant, Index = 7.26 (95% CI [.7899 to 16.1526]); the mediational path through anticipated personal growth was not significant, Index = .3804 (95% CI [-1.4846 to 2.5541]).

These results provided important evidence for the unique driving role of personal growth on goal-aligned behaviors after attaining the original goal. For students who had completed the financial

learning program, viewing this achievement as a completed journey (vs. a destination) helped them look back to derive a sense of personal growth, which led them to spend more time learning about saving and investing (H1–H3). In contrast, for students who had not yet started this learning program, the journey metaphor (vs. destination metaphor) motivated learning by helping them derive greater continuity to their ideal future identity, supporting and replicating the findings documented in Landau et al. (2014).

So far, we have documented the effect of a journey metaphor on people's behavioral intent and on their actual behavior after attaining their original goals (Studies 1–4), as well as before they start a goal pursuit (Study 4). However, how about *during* goal pursuit? Specifically, would the journey metaphor be similarly effective if we implemented it when people got near their end goal but had not yet attained it? Study 5 tested this important boundary condition. As mentioned earlier, prior research showed that as people approach a finish line, looking forward to what is left to accomplish (i.e., the unfinished task) can be more motivating than looking backward (e.g., the to-go frame and the small-area hypothesis; Koo & Fishbach, 2008, 2012). Therefore, it is possible that when goal pursuit is still in progress and people are getting near the end (but have not yet attained the goal), a destination (vs. journey) metaphor could be more effective because it highlights the remaining distance to the end goal; in contrast, the journey (vs. destination) metaphor would be more effective in sustaining or increasing goal-aligned behaviors after people have attained the goal, as it helps to accentuate how one has grown into this goal-attained state. To test this boundary condition, we launched a walking program, leveraging the journey metaphor to increase walking—another behavior that can benefit from continuation.

## Study 5: A Boundary Condition of Journey Metaphor

We conducted a 14-day walking program in the field and captured exercisers' actual behavior of continuing tracking their walking for another 3 days after the completion of the program. In addition, we manipulated whether the exercisers went through the metaphor practice during the program or right after completing their walking goal in the program.

## Method

**Participants.** Similar to Study 4, we aimed to recruit 400 exercisers. The recruitment message was posted at an online subject pool at a West Coast university, and was described as a study for people interested in participating in a walking program designed by the lab; the advertisement for the study stated: "In this study, you will use the Pacer app to track your walking. This is a 14-day program. We will send you one check-in survey during the program to ask your opinion about the program." As in Study 3, we did not compensate participants for joining the program; people signed up because they wanted to track their number of steps walked.

To ensure that we could obtain 400 completes for analysis, we kept the recruitment open for 3.5 weeks, during which 603 staff members and students inquired about the program and took the introductory survey. Among them, 217 either did not start the program at all or dropped out halfway, leaving us with a final sample of 386 staff members and students (69.2% female, 30.6%

male, one person unidentified; mean age = 26.61,  $SD = 9.93$ ; mean weight = 143.80 pounds,  $SD = 32.99$ ). These participants were randomly assigned to one of the four conditions, constituting a 2 (metaphor: journey vs. destination)  $\times$  2 (goal attainment: not yet vs. yes) between-subjects design.

**Procedure.** Staff members and students who were interested in joining the walking program took the introductory survey, in which we asked their age, gender, and past and current usage of pedometers/step trackers. Of the participants, 258 had used a step tracker before, and 155 were currently using a step tracker when they signed up; these participants were instructed to remove their step trackers and use the walking app offered by the lab for the duration of the walking program. The survey informed participants that this was a 14-day walking program, and their goal was to reach 100,000 steps. We further informed them that based on research, experts recommend walking at least 10,000 steps every day to be healthy. Similar to Study 3, participants also reported how important it was for them to walk 100,000 steps (1 = *not at all important* to 7 = *extremely important*) and how difficult it would be to walk 100,000 steps (1 = *not at all difficult* to 7 = *extremely difficult*). There was no difference among participants in their baseline perceived goal importance and difficulty.

Participants followed the instructions to download the Pacer step-tracking mobile app (alternatively called Pedometer, Step Counter & Weight Loss Tracker App). They followed the instructions to set up individual profiles in Pacer and provided their profile ID in the survey (for our record). Participants were asked to report the number of steps displayed on the mobile app every day using our walking program check-in website (see Appendix E); participants entered the number of steps and also uploaded a screenshot of the steps displayed on the app every day, allowing us to cross-check and track the amount of progress they had made.

To prevent uneven dropout rates across conditions, we randomly assigned participants to one of the four conditions once they had consistently posted their steps for 7 days, past the halfway point of the program. Depending on the condition to which they were assigned, participants received a Program Survey either when they got near the end goal but had not yet attained it (i.e., when they reached 70% complete, totaling 70,000 steps) or when they had just attained the walking goal (i.e., when they reached 100% complete, totaling 100,000 steps). To incentivize all participants in the walking program to complete this program survey (in which we administered the metaphor manipulations), we paid them with \$10 Amazon Gift cards upon the completion of the survey. The survey asked participants to think about the walking goal they had been working on (and the behaviors they had engaged in) under the guidance of either the journey or the destination visual metaphor from Study 1.

After describing their experience using either the journey or the destination metaphor, we informed the participants that they would now have an opportunity either to finish the study or to keep tracking their steps for another 3 days. Participants were reminded that if they decided to continue tracking their steps for 3 days, they would continue to fill out the check-in form and upload their screenshots. We monitored the website (without sending any additional prompt to the participants), and recorded the total number of steps that participants walked for three additional days as an indicator of their continuing goal-aligned behavior.

## Results and Discussion

The ANOVA on the total number of steps participants accumulated during the three additional days revealed a main effect of goal attainment,  $F(1, 382) = 21.75, p < .001, \eta^2 = .054$ , such that those who had not attained the program goal when they received the program survey walked more steps ( $M = 24,172.63$  steps,  $SD = 30,360.52$ ) than those who had just attained the program goal ( $M = 12,737.00$  steps,  $SD = 15,131.89$ ); this is consistent with prior literature suggesting that people tend to disengage from goal-aligned behaviors after attaining their original goals (Denzler et al., 2009; Ferguson & Bargh, 2004; Förster et al., 2005; Liberman & Förster, 2000). More important, this main effect was qualified by the hypothesized Metaphor  $\times$  Goal Attainment interaction,  $F(1, 382) = 6.36, p = .012, \eta^2 = .016$ .

For the exercisers who received the program survey after they had just attained their walking goal, those who used a journey metaphor walked significantly more during the three additional days ( $M = 15,447.36$  steps,  $SD = 17,120.28$ ) than did those using a destination metaphor ( $M = 9997.49$  steps,  $SD = 12,310.32$ ),  $t(185) = 2.50, p = .013$ , providing supportive evidence for H1. Among the exercisers who were still working toward the walking goal and had not yet attained it when receiving the program survey, we observed a marginally significant opposite pattern; the trend suggested that those who used a destination metaphor walked marginally more ( $M = 27,610.77$  steps,  $SD = 33,453.61$ ) than did those using a journey metaphor ( $M = 20,699.76$  steps,  $SD = 26,599.31$ ),  $t(197) = -1.61, p = .109$  (see Figure 1).

Study 5 provided additional support for our first hypothesis—in this case, by capturing the number of steps people walked for three additional days after completing the 14-day walking program. When the journey metaphor was administered after exercisers had achieved their original walking goal in the program, it reduced the likelihood of disengagement in this phase (as suggested by the main effect of goal attainment) and increased the number of steps people walked for 3 days afterward. Of interest, when people got near the program's walking goal but had not yet attained it, construing one's past behaviors as a journey did not produce the same effect; in fact, focusing on the destination aspect of this path could be more motivating, likely because it accentuated the end goal that one still needed to achieve (Carver & Scheier, 1998; Koo & Fishbach, 2008, 2012).

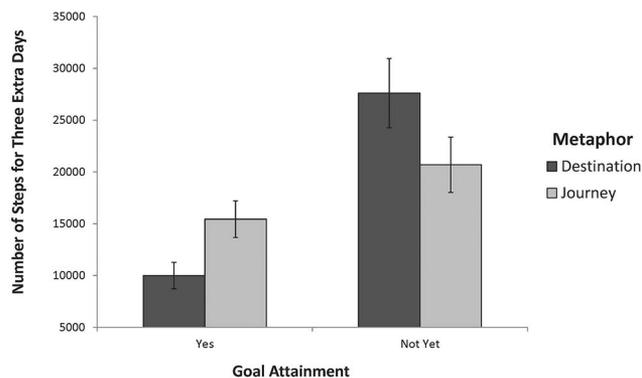


Figure 1. Number of steps as a function of metaphor and goal attainment (Study 5). Error bars represent  $\pm 1$  SEM.

In our final study, we crossed borders to test the effect of the journey metaphor among executives in an executive education program in Africa; this study helped to further enhance the generalizability of our findings (to a different culture, goal context, and subject pool), the strength of our empirical evidence, and external validity, by underscoring the feasibility and impact of metaphor use. This is especially important given recent research showing critical variability in self-perceptions, motivation, and behaviors across different cultures and populations (e.g., Chao et al., 2017; Chiao & Cheon, 2010; Henrich et al., 2010).

### Study 6: Completing an Executive Education Program in Africa

We moved our test to the African country of Ghana and assigned executives who had just completed an executive education program to a journey metaphor, a destination metaphor, or a no-metaphor control condition. In the two metaphor conditions, executives participated in a 30-min thought practice, guided by three trained on-site interviewers in conjunction with the graduation ceremony. Six months after graduation, all executives were asked to report their continuing goal-aligned behaviors (i.e., continuing to implement business practices from the program) through the program's standard follow-up survey either online or over the phone (when an Internet connection was not available).

#### Method

**Participants.** There were 106 executives in an executive education program in Africa who participated in this study. There was no recruitment advertisement as all executives in the two metaphor conditions simply attended an exit interview in conjunction with the graduation ceremony. The program's participants were 21.7% female and 78.3% male, with ages ranging from 25 to 61 (mean age = 43.58,  $SD = 8.95$ ).<sup>9</sup> We again used a 3 (metaphor: journey, destination, control) between-subjects design. To reduce suspicion of the manipulations and potential demand effects, we did not randomly assign three conditions within each cohort; instead, based on the advice of the administration office, we isolated a clean sample (Cohorts 1 and 2) to serve as a pure control (i.e., they did not go through any metaphor practice) and executed the metaphor manipulations randomly within Cohorts 3 and 4 (i.e., half of Cohort 3 and half of Cohort 4 were in the journey condition, and the other half of these two cohorts were in the destination condition). Because executives participated in different cohorts based solely on time constraints and not on any other goal-related dimension or individual characteristics (e.g., age, gender, prior education, work experience, and industry), this design ensured high executability and a low chance of confounds while minimizing demand effect.

**Procedure.** Executives in Ghana, Africa signed up for the executive education program voluntarily and were divided into different cohorts based on their availability. The first cohort had 27 executives, the second cohort had 26 executives, the third cohort had 31 executives, and the fourth cohort had 22 executives. During the education program, these executives participated in lectures, group discussions, and business simulations and had to complete assignments, exams, and presentations to receive a certificate. The goal of these executives was to *adopt and implement global*

*business practices* (e.g., scalable supply chain design, standard accounting practices and reporting, and regular development assessment) into their own businesses in Africa. On the last day of the program for each cohort, a graduation ceremony was held, during which executives received their certificates and celebrated the completion of the program (i.e., attaining their business learning goal).

For Cohorts 1 and 2, we observed the graduation ceremony without conducting any type of interview. For each executive in Cohorts 3 and 4, we administered a 30-min guided thought practice in conjunction with the ceremony, under the cover story that it was an exit interview conducted by the education program to obtain feedback from participants. The interview schedule was carefully designed so that the three on-site interviewers (2 males and 1 female) were randomly matched with the executives they were to interview to avoid gender or age bias. Further, the interviews were conducted in three separate rooms to avoid cross-subject contamination, and each interview (31 in Cohort 3 and 22 in Cohort 4) was successfully completed within 30 min. Interviewers were trained to follow a standard script to guide these executives to describe the attainment of their program goal, using a journey metaphor or a destination metaphor. The script was created by converting the linguistic metaphor stimuli in Study 2 from a written format to a one-on-one dialogue format; in addition, the script guided the interviewees to apply the metaphor to each specific topic in the education program as well as to each milestone in the program. The interviewers were advised that they could use more words, when needed, to clarify the procedures for the executives but could not share their own interpretations, opinions, or thoughts at any point during the interview. All interviews were recorded and then transcribed by a local agency; we sent a shortened version (i.e., a summary) of the transcription to the executives for their own records.

Six months after the graduation ceremony, executives in all four cohorts received the standard follow-up survey from the program. Executives were encouraged to complete the survey online; when an Internet connection was unavailable, the staff at the administration office called the executives to complete the survey. Embedded in the survey were 12 questions designed to gauge executives' goal-aligned behaviors in the six months after completing the program, that is, whether they continued to adopt and implement the global business practices they learned into their own businesses in Africa. Sample items included "I have made changes to my supply chain that will help my company scale," "My company has adopted accounting practices preferred by top-tier investors," "I have made changes to my business that can accelerate its growth" (1 = *strongly disagree* to 5 = *strongly agree*). See Appendix F for the list of all 12 items.

<sup>9</sup> To maintain the anonymity and confidentiality of the executives, the administration office could not provide specific demographic information of the executives in the four cohorts. Thus, we report the aggregate age and gender information of all cohorts from the past 2 years for readers' reference.

## Results and Discussion

The executives' responses to these 12 postprogram goal-aligned behavior questions demonstrated high convergence (Cronbach's  $\alpha = .786$ ); thus, we used the average of these responses to create a composite measure of postprogram goal-aligned behavior. To examine the extent to which these executives continued to implement the business practices after the conclusion of the program, we used the same two planned orthogonal contrast codes as in the previous studies. Consistent with the results in the previous studies, when executives were guided to describe their attained goal as a completed journey, they were more likely to continue goal-aligned behaviors ( $M = 4.73$ ,  $SD = .24$ ), compared with those using a destination metaphor ( $M = 4.52$ ,  $SD = .30$ ) or using no metaphor at all ( $M = 4.57$ ,  $SD = .38$ ),  $t(91) = 2.06$ ,  $p = .042$ ; the latter two groups did not significantly differ from each other,  $t(91) = -.51$ , *ns*. The alternative set of orthogonal contrast codes also revealed consistent results: Merely using metaphors did not affect behaviors,  $t(91) = -.86$ , *ns*; it was the use of the journey metaphor that increased executives' goal-aligned behaviors after the program,  $t(91) = 1.95$ ,  $p = .054$ .

Study 6 provided final evidence that construing an attained goal as a completed journey increased the likelihood that people would continue behaviors aligned with their attained goal. The executives who successfully attained the goal of adopting the practices into their business operations were more likely to continue implementing such practices, if they were guided to think about their completed pursuit as a path with a focus on the journey they took, rather than the destination they had reached, or in a literal manner.

### General Discussion

Research on when and why individuals set and achieve goals in life, including academic, career, learning, fitness, and health goals, has enjoyed much attention in social psychology. Yet, little is known about when and why we continue goal-aligned behaviors like reading, learning, exercising, and monitoring food portions—behaviors that allow us to achieve our original goals in the first place. Six studies involving over 1,600 people across cultures and samples (executives in Africa, dieters, exercisers, and college students), run both in the lab and in the field, and using both linguistic and visual metaphors in a variety of goal pursuit contexts (academic, learning, fitness, dieting, and walking), showed that by using the journey metaphor as a cognitive tool, we can increase the likelihood that individuals will continue behaviors that are aligned with their attained original goals.

To derive richer insight from our data, we compiled the content that participants wrote under journey and destination metaphors in Studies 1–5, and had two coders blind to the hypotheses and conditions code the content for any mentioning of journey, destination, the beginning of the pursuit (the goal-unattained state), the past, the present success (the goal-attained state), the future, the end goal, as well as any mention of the process/steps the participants took, the perceived value/instrumentality of the actions they took, the feeling of growth/change, and the feeling of interest/enjoyment/fun.

We found that people in the journey (vs. destination) conditions were more likely to mention thoughts related to a journey, the beginning of the pursuit, the process/steps they took, the instrumentality of the actions they took, and the feeling of growth and

change; in contrast, those in the destination condition were more likely to mention thoughts related to the destination, the end goal, and the present success (see Appendix G for a summary of results).

These findings suggest that the journey metaphor may have helped people think more about the actions they took during the journey, where they started out, and all the ups and downs along the way, leading to the feeling of growth. These thoughts could also contribute to an increased perception that the actions they took were instrumental and should be continued. In contrast, the destination metaphor did not build such connections and focused people instead on the present success of goal attainment. Conceptual metaphors hence provide rich cognitive lenses through which people deliberate and reframe an experience.

These insights further echo classic research on process and outcome mental simulations (Taylor & Schneider, 1989). For instance, for 5 to 7 days before a midterm exam, Pham and Taylor (1999) asked college freshman to mentally simulate the process for doing well (e.g., good study habits; when, where, and how they would study) versus a desired outcome (e.g., getting a good grade) versus both the process and the outcome or no simulation at all. They found that process simulation enhanced studying and improved grades by increasing planning behaviors and reducing anxiety (affect management). Thus, it is plausible that thinking about a completed goal as a journey similarly increases the connection between the actions one has taken (i.e., past planning) and the achieved goal, while inducing positive feelings such as the feeling of growth. In contrast, when the means for goal attainment are perceived to be unpleasant, Krause and Freund (2014) found that outcome focus reduced procrastination by directing attention away from the means while highlighting the importance of goal achievement, similar to the destination metaphor that focuses people on the success of achieving the end goal. We encourage future research to dive deeper, and broader, to explore how the same set of metaphors can be leveraged to shape perceptions and behaviors in different ways and domains, and how people may derive different meanings and experience different consequences when applying these tools.

### Contribution to the Goal Pursuit Model

Our findings add to the multiphase model of goal pursuit by examining an underresearched last phase in this process—the postactional phase (Gollwitzer et al., 1990; Heckhausen & Gollwitzer, 1987). Beyond filling an important gap in the literature, this work speaks to a larger question: When and why do people continue behaviors aligned with their attained original goals? This question is particularly important as prior research has shown that goal attainment often reduces motivation and cognitive readiness (Förster et al., 2005; Liberman & Förster, 2000; Marsh et al., 1998), and the current findings illuminate a promising path to help enhance engagement in the postattainment phase.

Our findings also expand the growing research on the dynamic driving forces over the course of a goal pursuit (e.g., Huang & Zhang, 2011, 2013; Koo & Fishbach, 2008). This stream of research has demonstrated that whereas concerns of feasibility and commitment dictate the amount of effort people invest in the beginning of a goal pursuit, it is the remaining discrepancy that drives their motivation when goal attainment is near. What happens when feasibility is no longer a concern and discrepancy no

longer exists (i.e., when a goal is successfully achieved)? By integrating theories and findings from the conceptual metaphor, intrinsic motivation, and growth literatures, we show that in these situations, it is the feeling that one has grown into the present goal-attained state that increases the continuation of goal-aligned behaviors (Studies 3–4).

Our findings also offer opportunities to reconcile seemingly conflicting results in the postactional phase. There are situations in which individuals' motivation and cognitive readiness actually increases after a goal is attained. For example, when the goal-directed behavior is viewed as an opportunity rather than an obligation, goal completion can conversely vitalize individuals and facilitate subsequent goal-aligned behaviors (Laran & Janiszewski, 2011). By considering the driving role of personal growth in the postactional phase, one can surmise that in conditions in which motivation wanes after goal completion, personal growth is perhaps lacking (e.g., when the behavior is perceived as an obligation), whereas when motivation increases after goal completion, it is fueled by the feeling of growth (e.g., when the behavior is viewed as an opportunity). As a preliminary test of this premise, in an ancillary study, we asked high school students to think of a recently accomplished academic goal of their own choosing versus a goal of another's choosing (e.g., parents, teachers) and found that the journey metaphor generated a stronger effect when the goal was their own personal choice. Future research is needed to delve more deeply into such boundary conditions, to explore how autonomy may aid in the growth people can derive from attaining goals, and, more broadly, to identify other factors (beyond the journey metaphor) that may cultivate feelings of personal growth after goal attainment and the factors that may increase or decrease individuals' goal-aligned behaviors.

### Contribution to the Metaphor Literature

To our knowledge, this is the first article that demonstrates how shifting people's focus of a metaphor (i.e., focusing on the journey vs. the destination of a path) can lead to different perceptions and behaviors. Our findings dovetail with the recent work on metaphors (Keefer et al., 2011; Krishna & Schwarz, 2014; Landau et al., 2010, 2014; Lee & Schwarz, 2014; Xu & Labroo, 2014; Zwebner, Lee, & Goldenberg, 2014) and underscore the effect of metaphors on perceptions, intent, behavior, and choice. Convergent evidence in this research further deepens our understanding of the multifaceted nature of "path" as a metaphor, which is often used by individuals and scholars to describe goal pursuit efforts, isolating why it works (personal growth and identity continuity in Studies 3–4) and when it works the best (goal initiation and goal attainment in Study 4, and after a goal has been attained in Study 5). Further, metaphors are particularly useful in practice, as they are relatively easy to evoke and can lead to a persistent sizable effect, as demonstrated through both in-lab and field experiments.

Future research could explore potential boundary conditions of the journey/path metaphor. For instance, when a goal pursuit process is extremely painful, thinking about it as a journey may induce negative thoughts, which might cancel the positive effect of personal growth; on the other hand, a more painful path that one has completed could also aid in increasing the feeling of how one has indeed grown into the new desirable state. Furthermore, not all goals benefit from continuation; a goal of buying a house ends

when the contract for the property is signed. The differentiation between these two types of goal pursuits (and the types of metaphors that would be relevant for each type of pursuit) hence constitutes an important area for future research.

### Contribution to Research on Motivation and Growth

We draw from growth research (Dweck, 1986; Dweck & Leggett, 1988) and intrinsic motivation theories (e.g., deCharms, 1968; Fisher, 1978; Kasser & Ryan, 1993; Kruglanski, 1975; Ryan & Deci, 2000) to underscore how these important streams of literature intersect. Our findings validate and extend work on growth-based interventions, from improving the performance of vulnerable individuals (e.g., disadvantaged students; Blackwell et al., 2007; Broda et al., 2018; Paunesku et al., 2015; Yeager & Walton, 2011) to sustaining goal-aligned behaviors of students and adults who have just attained a specific goal.

In addition, prior research on mental contrasting has provided rich evidence that thought exercises can create substantial behavior change across ages and cultures and in domains from health to academic achievement (for a review, see Oettingen, 2012). This literature shows that when fantasizing about a future and comparing that to the present state, people create a strong association between the future and the reality, which highlights the instrumental behaviors they need to engage in to overcome the present reality (Oettingen, 1996, 2000; Oettingen & Mayer, 2002; Oettingen et al., 2001). In contrast, simply producing positive fantasies about a desired future (without contrasting to the present reality) allows people to enjoy the future in the here and now, yielding little motivation to act (Oettingen & Mayer, 2002).

Existing work on mental contrasting has focused on exploring the contrast between a desired future state and the present reality (that can produce active goal pursuit, depending on a person's expectation of goal attainment; e.g., Oettingen, 2012; Oettingen & Mayer, 2002). We complement this work by theorizing that after a goal is attained, the uncertainty about the goal's attainability is not relevant anymore. By comparing the present goal-attained state with the previous goal-unattained state through a journey metaphor, people can more clearly experience how much they have grown into the goal-attained state, and this feeling of growth helps to fuel behaviors aligned with the attained goal.

Last, future research is needed to explore how the connection of different goal states (e.g., unattained vs. attained) may at times be similar to or distinct from the connection of different identities or self-views (e.g., present and future identity), as well as what types of goal-oriented domains are likely to lead to perceptions of personal growth and, thus, sustain goal-aligned behaviors. For example, the degree to which personal growth can be derived may vary in domains that relate to intrinsic values or that are seen as malleable, such as learning or health (Bauer & McAdams, 2004, 2010), compared with domains that are perceived to be more fixed (e.g., personality or morality, Molouki & Bartels, 2017). Furthermore, the connection that people experience across different goal states can potentially be leveraged to help alleviate the feeling of discontinuity (e.g., derailment; Burrow, Hill, Ratner, & Fuller-Rowell, 2018).

It is our hope that this research serves as the beginning of a journey of diverse research programs that utilize a variety of metaphors to enhance goal pursuers' chances of maintaining their success. We have

outlined important steps for future research to take, and we expect ups and downs along the way, just like all good journeys.

## References

- Bauer, J. J., & McAdams, D. P. (2004). Personal growth in adults' stories of life transitions. *Journal of Personality, 72*, 573–602. <http://dx.doi.org/10.1111/j.0022-3506.2004.00273.x>
- Bauer, J. J., & McAdams, D. P. (2010). Eudaimonic growth: Narrative growth goals predict increases in ego development and subjective well-being 3 years later. *Developmental Psychology, 46*, 761–772. <http://dx.doi.org/10.1037/a0019654>
- Bayuk, J. B., Janiszewski, C., & LeBoeuf, R. A. (2010). Letting good opportunities pass us by: Examining the role of mind-set during goal pursuit. *Journal of Consumer Research, 37*, 570–583. <http://dx.doi.org/10.1086/654892>
- Bergstrom, R. L., & Neighbors, C. (2006). Body image disturbance and the social norms approach: An integrative review of the literature. *Journal of Social and Clinical Psychology, 25*, 975–1000. <http://dx.doi.org/10.1521/jscp.2006.25.9.975>
- Blackwell, L. S., Trzesniewski, K. H., & Dweck, C. S. (2007). Implicit theories of intelligence predict achievement across an adolescent transition: A longitudinal study and an intervention. *Child Development, 78*, 246–263. <http://dx.doi.org/10.1111/j.1467-8624.2007.00995.x>
- Broda, M., Yun, J., Schneider, B., Yeager, D. S., Walton, G. M., & Diemer, M. (2018). Reducing inequality in academic success for incoming college students: A randomized trial of growth mindset and belonging interventions. *Journal of Research on Educational Effectiveness, 11*, 317–338. <http://dx.doi.org/10.1080/19345747.2018.1429037>
- Bruner, J. S. (1957). On perceptual readiness. *Psychological Review, 64*, 123–152. <http://dx.doi.org/10.1037/h0043805>
- Brunstein, J. C. (1993). Personal goals and subjective well-being: A longitudinal study. *Journal of Personality and Social Psychology, 65*, 1061–1070. <http://dx.doi.org/10.1037/0022-3514.65.5.1061>
- Burger, J. M., Bell, H., Harvey, K., Johnson, J., Stewart, C., Dorian, K., & Swedroe, M. (2010). Nutritious or delicious? The effect of descriptive norm information on food choice. *Journal of Social and Clinical Psychology, 29*, 228–242. <http://dx.doi.org/10.1521/jscp.2010.29.2.228>
- Burrow, A. L., Hill, P. L., Ratner, K., & Fuller-Rowell, T. E. (2018). Derailment: Conceptualization, measurement, and adjustment correlates of perceived change in self and direction. *Journal of Personality and Social Psychology*. [Advance online publication.] <http://dx.doi.org/10.1037/pspp0000209>
- Busseri, M. A., Choma, B. L., & Sadava, S. W. (2009). “As good as it gets” or “The best is yet to come”? How optimists and pessimists view their past, present, and anticipated future life satisfaction. *Journal of Personality and Individual Differences, 47*, 352–356. <http://dx.doi.org/10.1016/j.paid.2009.04.002>
- Carver, C. S., & Scheier, M. F. (1998). *On the self-regulation of behavior*. New York, NY: Cambridge University Press. <http://dx.doi.org/10.1017/CBO9781139174794>
- Chao, M. M., Visaria, S., Mukhopadhyay, A., & Dehejia, R. (2017). Do rewards reinforce the growth mindset?: Joint effects of the growth mindset and incentive schemes in a field intervention. *Journal of Experimental Psychology: General, 146*, 1402–1419. <http://dx.doi.org/10.1037/xge0000355>
- Chiao, J. Y., & Cheon, B. K. (2010). The weirdest brains in the world. *Behavioral and Brain Sciences, 33*, 88–90. <http://dx.doi.org/10.1017/S0140525X10000282>
- deCharms, R. (1968). *Personal causation*. New York, NY: Academic.
- Deci, E. L., & Ryan, R. M. (2000). The “what” and “why” of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry, 11*, 227–268. [http://dx.doi.org/10.1207/S15327965PLI1104\\_01](http://dx.doi.org/10.1207/S15327965PLI1104_01)
- Denzler, M., Förster, J., & Liberman, N. (2009). How goal-fulfillment decreases aggression. *Journal of Experimental Social Psychology, 45*, 90–100. <http://dx.doi.org/10.1016/j.jesp.2008.08.021>
- Dweck, C. S. (1986). Motivational processes affecting learning. *American Psychologist, 41*, 1040–1048. <http://dx.doi.org/10.1037/0003-066X.41.10.1040>
- Dweck, C. S., & Leggett, E. L. (1988). A social-cognitive approach to motivation and personality. *Psychological Review, 95*, 256–273. <http://dx.doi.org/10.1037/0033-295X.95.2.256>
- Elliot, A. J., Sheldon, K. M., & Church, M. A. (1997). Avoidance personal goals and subjective well-being. *Personality and Social Psychology Bulletin, 23*, 915–927. <http://dx.doi.org/10.1177/0146167297239001>
- Ferguson, M. J., & Bargh, J. A. (2004). Liking is for doing: The effects of goal pursuit on automatic evaluation. *Journal of Personality and Social Psychology, 87*, 557–572. <http://dx.doi.org/10.1037/0022-3514.87.5.557>
- Fishbach, A., & Dhar, R. (2005). Goals as excuses or guides: The liberating effect of perceived goal progress on choice. *Journal of Consumer Research, 32*, 370–377. <http://dx.doi.org/10.1086/497548>
- Fishbach, A., Friedman, R. S., & Kruglanski, A. W. (2003). Leading us not unto temptation: Momentary allurements elicit overriding goal activation. *Journal of Personality and Social Psychology, 84*, 296–309. <http://dx.doi.org/10.1037/0022-3514.84.2.296>
- Fisher, C. D. (1978). The effects of personal control, competence, and extrinsic reward systems on intrinsic motivation. *Organizational Behavior and Human Performance, 21*, 273–288. [http://dx.doi.org/10.1016/0030-5073\(78\)90054-5](http://dx.doi.org/10.1016/0030-5073(78)90054-5)
- Förster, J., Liberman, N., & Higgins, E. T. (2005). Accessibility from active and fulfilled goals. *Journal of Experimental Social Psychology, 41*, 220–239. <http://dx.doi.org/10.1016/j.jesp.2004.06.009>
- Gibbs, R. W., Jr. (1994). *The poetics of mind: Figurative thought, language, and understanding*. New York, NY: Cambridge University Press.
- Glucksberg, S., & Keysar, B. (1990). Understanding metaphorical comparisons: Beyond similarity. *Psychological Review, 97*, 3–18. <http://dx.doi.org/10.1037/0033-295X.97.1.3>
- Gollwitzer, P. M. (1999). Implementation intentions: Strong effects of simple plans. *American Psychologist, 54*, 493–503. <http://dx.doi.org/10.1037/0003-066X.54.7.493>
- Gollwitzer, P. M., Heckhausen, H., & Steller, B. (1990). Deliberative and implemental mind-sets: Cognitive tuning toward congruous thoughts and information. *Journal of Personality and Social Psychology, 59*, 1119–1127. <http://dx.doi.org/10.1037/0022-3514.59.6.1119>
- Gollwitzer, P. M., & Kinney, R. F. (1989). Effects of deliberative and implemental mind-sets on illusion of control. *Journal of Personality and Social Psychology, 56*, 531–542. <http://dx.doi.org/10.1037/0022-3514.56.4.531>
- Goschke, T., & Kuhl, J. (1993). Representation of intentions: Persisting activation in memory. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 19*, 1211–1226. <http://dx.doi.org/10.1037/0278-7393.19.5.1211>
- Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. New York, NY: Guilford Press.
- Heath, C., Larrick, R. P., & Wu, G. (1999). Goals as reference points. *Cognitive Psychology, 38*, 79–109. <http://dx.doi.org/10.1006/cogp.1998.0708>
- Heckhausen, H., & Gollwitzer, P. M. (1987). Thought contents and cognitive functioning in motivational versus volitional states of mind. *Motivation and Emotion, 11*, 101–120. <http://dx.doi.org/10.1007/BF0092338>
- Henrich, J., Heine, S. J., & Norenzayan, A. (2010). Most people are not WEIRD. *Nature, 466*, 29. <http://dx.doi.org/10.1038/466029a>
- Higgins, E. T. (1987). Self-discrepancy: A theory relating self and affect. *Psychological Review, 94*, 319–340. <http://dx.doi.org/10.1037/0033-295X.94.3.319>

- Huang, S., & Zhang, Y. (2011). Motivational consequences of perceived velocity in consumer goal pursuit. *Journal of Marketing Research*, 48, 1045–1056. <http://dx.doi.org/10.1509/jmr.10.0063>
- Huang, S. C., & Zhang, Y. (2013). All roads lead to Rome: The impact of multiple attainment means on motivation. *Journal of Personality and Social Psychology*, 104, 236–248. <http://dx.doi.org/10.1037/a0031039>
- Kasser, T., & Ryan, R. M. (1993). A dark side of the American dream: Correlates of financial success as a central life aspiration. *Journal of Personality and Social Psychology*, 65, 410–422. <http://dx.doi.org/10.1037/0022-3514.65.2.410>
- Keefer, L. A., Landau, M. J., Sullivan, D., & Rothschild, Z. K. (2011). Exploring metaphor's epistemic function: Uncertainty moderates metaphor-consistent priming effects on social perceptions. *Journal of Experimental Social Psychology*, 47, 657–660. <http://dx.doi.org/10.1016/j.jesp.2011.02.002>
- Koo, M., & Fishbach, A. (2008). Dynamics of self-regulation: How (un-)accomplished goal actions affect motivation. *Journal of Personality and Social Psychology*, 94, 183–195. <http://dx.doi.org/10.1037/0022-3514.94.2.183>
- Koo, M., & Fishbach, A. (2012). The small-area hypothesis: Effects of progress monitoring on goal adherence. *Journal of Consumer Research*, 39, 493–509. <http://dx.doi.org/10.1086/663827>
- Kövecses, Z. (2010). *Metaphor: A practical introduction*. New York, NY: Oxford University Press.
- Krause, K., & Freund, A. M. (2014). How to beat procrastination: The role of goal focus. *European Psychologist*, 19, 132–144. <http://dx.doi.org/10.1027/1016-9040/a000153>
- Krishna, A., & Schwarz, N. (2014). Sensory marketing, embodiment, and grounded cognition: Implications for consumer behavior. *Journal of Consumer Psychology*, 24, 159–168. <http://dx.doi.org/10.1016/j.jcps.2013.12.006>
- Kruglanski, A. W. (1975). The endogenous-exogenous partition in attribution theory. *Psychological Review*, 82, 387–406. <http://dx.doi.org/10.1037/0033-295X.82.6.387>
- Kruglanski, A. W., Friedman, I., & Zeevi, G. (1971). The effects of extrinsic incentive on some qualitative aspects of task performance. *Journal of Personality*, 39, 606–617. <http://dx.doi.org/10.1111/j.1467-6494.1971.tb00066.x>
- Kruglanski, A. W., Shah, J. Y., Fishbach, A., Friedman, R., Chun, W. Y., & Sleeth-Keppler, D. (2002). A theory of goal systems. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 34, pp. 331–378). San Diego, CA: Academic.
- Lakoff, G. (1993). The contemporary theory of metaphor. In A. Ortony (Ed.), *Metaphor and thought* (pp. 202–251). New York, NY: Cambridge University Press. <http://dx.doi.org/10.1017/CBO9781139173865.013>
- Lakoff, G., & Johnson, M. (1980). The metaphorical structure of the human conceptual system. *Cognitive Science*, 4, 195–208. [http://dx.doi.org/10.1207/s15516709cog0402\\_4](http://dx.doi.org/10.1207/s15516709cog0402_4)
- Lakoff, G., & Johnson, M. (1999). *Philosophy in the flesh: The embodied mind and its challenge to Western thought*. New York, NY: Basic Books.
- Landau, M. J., Meier, B. P., & Keefer, L. A. (2010). A metaphor-enriched social cognition. *Psychological Bulletin*, 136, 1045–1067. <http://dx.doi.org/10.1037/a0020970>
- Landau, M. J., Oyserman, D., Keefer, L. A., & Smith, G. C. (2014). The college journey and academic engagement: How metaphor use enhances identity-based motivation. *Journal of Personality and Social Psychology*, 106, 679–698. <http://dx.doi.org/10.1037/a0036414>
- Landau, M. J., Sullivan, D., & Greenberg, J. (2009). Evidence that self-relevant motives and metaphoric framing interact to influence political and social attitudes. *Psychological Science*, 20, 1421–1427. <http://dx.doi.org/10.1111/j.1467-9280.2009.02462.x>
- Laran, J., & Janiszewski, C. (2011). Work or fun? How task construal and completion influence regulatory behavior. *Journal of Consumer Research*, 37, 967–983. <http://dx.doi.org/10.1086/656576>
- Lee, S. W., & Schwarz, N. (2014). Framing love: When it hurts to think we were made for each other. *Journal of Experimental Social Psychology*, 54, 61–67. <http://dx.doi.org/10.1016/j.jesp.2014.04.007>
- Lewin, K. (1939). Field theory and experiment in social psychology: Concepts and methods. *American Journal of Sociology*, 44, 868–896. <http://dx.doi.org/10.1086/218177>
- Liberman, N., & Förster, J. (2000). Expression after suppression: A motivational explanation of postsuppressional rebound. *Journal of Personality and Social Psychology*, 79, 190–203. <http://dx.doi.org/10.1037/0022-3514.79.2.190>
- Mangelsdorf, J., Eid, M., & Luhmann, M. (2019). Does growth require suffering? A systematic review and meta-analysis on genuine posttraumatic and postecstatic growth. *Psychological Bulletin*, 145, 302–338. <http://dx.doi.org/10.1037/bul0000173>
- Marsh, R. L., Hicks, J. L., & Bink, M. L. (1998). Activation of completed, uncompleted, and partially completed intentions. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 24, 350–361. <http://dx.doi.org/10.1037/0278-7393.24.2.350>
- Milne, M. J., Kearins, K., & Walton, S. (2006). Creating adventures in wonderland: The journey metaphor and environmental sustainability. *Organization*, 13, 801–839. <http://dx.doi.org/10.1177/1350508406068506>
- Molouki, S., & Bartels, D. M. (2017). Personal change and the continuity of the self. *Cognitive Psychology*, 93, 1–17. <http://dx.doi.org/10.1016/j.cogpsych.2016.11.006>
- Newby-Clark, I. R., & Ross, M. (2003). Conceiving the past and future. *Personality and Social Psychology Bulletin*, 29, 807–818. <http://dx.doi.org/10.1177/0146167203029007001>
- Oettingen, G. (1996). Positive fantasy and motivation. The psychology of action: Linking cognition and motivation to behavior. In P. M. Gollwitzer & J. A. Bargh (Eds.), *Linking cognition and motivation to behavior* (pp. 236–259). New York, NY: Guilford Press.
- Oettingen, G. (2000). Expectancy effects on behavior depend on self-regulatory thought. *Social Cognition*, 18, 101–129. <http://dx.doi.org/10.1521/soco.2000.18.2.101>
- Oettingen, G. (2012). Future thought and behaviour change. *European Review of Social Psychology*, 23, 1–63. <http://dx.doi.org/10.1080/10463283.2011.643698>
- Oettingen, G., & Mayer, D. (2002). The motivating function of thinking about the future: Expectations versus fantasies. *Journal of Personality and Social Psychology*, 83, 1198–1212. <http://dx.doi.org/10.1037/0022-3514.83.5.1198>
- Oettingen, G., Pak, H., & Schnetter, K. (2001). Self-regulation of goal setting: Turning free fantasies about the future into binding goals. *Journal of Personality and Social Psychology*, 80, 736–753. <http://dx.doi.org/10.1037/0022-3514.80.5.736>
- Oettingen, G., & Schwörer, B. (2013). Mind wandering via mental contrasting as a tool for behavior change. *Frontiers in Psychology*, 4, 562. <http://dx.doi.org/10.3389/fpsyg.2013.00562>
- Paunesku, D., Walton, G. M., Romero, C., Smith, E. N., Yeager, D. S., & Dweck, C. S. (2015). Mind-set interventions are a scalable treatment for academic underachievement. *Psychological Science*, 26, 784–793. <http://dx.doi.org/10.1177/0956797615571017>
- Pham, L. B., & Taylor, S. E. (1999). From thought to action: Effects of process-versus outcome-based mental simulations on performance. *Personality and Social Psychology Bulletin*, 25, 250–260. <http://dx.doi.org/10.1177/0146167299025002010>
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55, 68–78. <http://dx.doi.org/10.1037/0003-066X.55.1.68>

- Schubert, T. W. (2005). Your highness: Vertical positions as perceptual symbols of power. *Journal of Personality and Social Psychology, 89*, 1–21. <http://dx.doi.org/10.1037/0022-3514.89.1.1>
- Sheldon, K. M., & Kasser, T. (1998). Pursuing personal goals: Skills enable progress, but not all progress is beneficial. *Personality and Social Psychology Bulletin, 24*, 1319–1331. <http://dx.doi.org/10.1177/01461672982412006>
- Simmons, J. P., Nelson, L. D., & Simonsohn, U. (2011). False-positive psychology: Undisclosed flexibility in data collection and analysis allows presenting anything as significant. *Psychological Science, 22*, 1359–1366. <http://dx.doi.org/10.1177/0956797611417632>
- Taylor, S. E., & Schneider, S. K. (1989). Coping and the simulation of events. *Social Cognition, 7*, 174–194. <http://dx.doi.org/10.1521/soco.1989.7.2.174>
- U.S. Department of Education, National Center for Education Statistics. (2016). *The condition of education 2016*. Washington, DC: NCES, 144.
- Wing, R. R., Hamman, R. F., Bray, G. A., Delahanty, L., Edelstein, S. L., Hill, J. O., . . . the Diabetes Prevention Program Research Group. (2004). Achieving weight and activity goals among diabetes prevention program lifestyle participants. *Obesity Research, 12*, 1426–1434. <http://dx.doi.org/10.1038/oby.2004.179>
- Woolley, K., & Fishbach, A. (2018). It's about time: Earlier rewards increase intrinsic motivation. *Journal of Personality and Social Psychology, 114*, 877–890. <http://dx.doi.org/10.1037/pspa0000116>
- Xu, A. J., & Labroo, A. A. (2014). Incandescent affect: Turning on the hot emotional system with bright light. *Journal of Consumer Psychology, 24*, 207–216. <http://dx.doi.org/10.1016/j.jcps.2013.12.007>
- Yeager, D. S., & Walton, G. M. (2011). Social-psychological interventions in education: They're not magic. *Review of Educational Research, 81*, 267–301. <http://dx.doi.org/10.3102/0034654311405999>
- Zeigarnik, B. (1938). On finished and unfinished tasks. In W. D. Ellis (Ed.), *A source book of Gestalt psychology* (pp. 300–314). London, England: Kegan Paul, Trench, Trubner & Company. <http://dx.doi.org/10.1037/11496-025>
- Zwebner, Y., Lee, L., & Goldenberg, J. (2014). The temperature premium: Warm temperatures increase product valuation. *Journal of Consumer Psychology, 24*, 251–259. <http://dx.doi.org/10.1016/j.jcps.2013.11.003>

## Appendix A

### Visual Metaphor Stimuli (Used in Studies 1, 3, and 5)



(Appendices continue)

**Appendix B**  
**Statistical Reports of Additional Measures**

	Study 1's Pilot			Study 2's Pilot		
	Journey	Destination	Control	Journey	Destination	Control
<b>Mental imagery</b>						
Clear	5.91 (1.03) <sup>a</sup>	5.56 (1.38) <sup>a c</sup>	5.97 (1.13) <sup>c</sup>	6.05 (1.15)	5.92 (1.26)	6.02 (1.02)
Detailed	5.45 (1.29)	5.14 (1.57) <sup>c</sup>	5.80 (1.24) <sup>c</sup>	5.71 (1.35)	5.80 (1.41)	5.78 (1.26)
Concrete	5.52 (1.34) <sup>a</sup>	5.03 (1.56) <sup>a c</sup>	5.79 (1.22) <sup>c</sup>	5.80 (1.25)	5.88 (1.28)	5.80 (1.24)
Vivid	5.81 (1.12) <sup>a</sup>	5.43 (1.51) <sup>a c</sup>	5.92 (1.15) <sup>c</sup>	5.84 (1.16)	6.01 (1.20)	5.94 (1.15)
Long time	2.67 (1.49)	2.97 (1.53) <sup>c</sup>	2.50 (1.67) <sup>c</sup>	2.45 (1.40)	2.47 (1.57)	2.42 (1.50)
Easy	5.75 (1.24)	5.42 (1.46) <sup>c</sup>	5.81 (1.40) <sup>c</sup>	5.78 (1.35)	6.10 (1.27)	5.94 (1.23)
<b>Goal attributes</b>						
Difficulty	4.65 (1.55)	4.61 (1.55)	4.85 (1.50)	4.52 (1.47)	4.44 (1.47)	4.64 (1.35)
Importance	6.35 (.94)	6.14 (1.07)	6.14 (.98)	6.20 (1.05)	6.15 (1.13)	6.06 (1.18)
Hard work	5.76 (1.26)	5.75 (1.24)	5.78 (1.18)	5.55 (1.22)	5.51 (1.33)	5.59 (1.32)
<b>Mood</b>						
Interested	9.95 (2.51)	9.78 (2.78)	9.88 (2.55)	9.50 (2.96)	9.30 (3.06)	9.50 (3.10)
Distressed	7.82 (1.75)	7.96 (1.72)	7.76 (1.96)	7.94 (1.54)	8.00 (1.36)	8.25 (1.05)
Excited	9.23 (3.01)	8.98 (3.04)	9.03 (3.00)	9.37 (2.71) <sup>a</sup>	8.39 (3.25) <sup>a</sup>	8.95 (3.04)
Upset	8.01 (1.53)	7.94 (1.46)	7.95 (1.45)	8.26 (1.14) <sup>a</sup>	7.90 (1.26) <sup>a</sup>	8.19 (1.00)
Strong	9.53 (2.86)	9.51 (2.97)	9.63 (2.92)	9.17 (3.04)	8.89 (3.21)	9.44 (2.94)
Guilty	7.96 (1.24)	7.86 (1.37)	8.03 (1.19)	8.13 (1.20)	7.98 (1.23)	8.01 (1.05)
Scared	7.68 (1.78)	7.93 (1.72)	7.90 (1.52)	8.07 (1.42)	8.03 (1.25)	8.06 (1.11)
Hostile	7.85 (1.52)	8.00 (1.25)	8.07 (.77)	7.99 (.85)	7.78 (1.13) <sup>c</sup>	8.10 (.71) <sup>c</sup>
Enthusiastic	10.06 (2.12)	9.38 (3.01)	9.67 (2.59)	9.56 (2.70)	9.01 (3.20)	9.51 (2.81)
Proud	9.80 (2.68)	9.39 (3.18) <sup>c</sup>	10.39 (2.31) <sup>c</sup>	9.55 (2.82)	9.41 (2.99)	9.82 (2.76)
Irritable	8.05 (1.91)	7.95 (1.83)	7.74 (2.03)	8.04 (1.76)	7.88 (1.46)	7.99 (1.25)
Alert	8.97 (3.22)	8.95 (3.13)	9.23 (2.95)	9.21 (2.94)	9.14 (3.00)	9.19 (3.15)
Ashamed	7.94 (1.23)	7.97 (1.18)	8.01 (1.23)	7.99 (1.34)	7.88 (1.33)	8.03 (1.09)
Inspired	9.45 (2.97)	9.78 (2.56)	9.91 (2.39)	9.52 (2.82)	9.31 (2.94)	9.32 (2.98)
Nervous	7.79 (2.04)	8.12 (1.81)	7.77 (2.15)	8.22 (1.76)	7.95 (1.69)	8.18 (1.72)
Determined	10.76 (1.92)	10.47 (2.18)	10.81 (2.06)	10.65 (2.23)	10.53 (2.56)	10.37 (2.69)
Attentive	9.89 (2.54)	9.57 (2.94)	9.78 (2.77)	9.75 (2.73)	9.56 (2.92)	9.86 (2.68)
Jittery	7.64 (2.02)	8.05 (1.73)	7.54 (1.96)	7.83 (1.61)	7.80 (1.64)	8.13 (.99)
Active	10.23 (2.47)	9.81 (3.03)	10.30 (2.57)	10.00 (2.63)	9.82 (2.85)	10.12 (2.51)
Afraid	7.69 (1.78)	7.98 (1.51)	7.76 (1.77)	8.20 (1.34)	8.01 (1.33)	8.14 (.96)
<b>Construal</b>						
BIF	.62 (.24)	.60 (.27)	.60 (.27)			

	Study 1			Study 2		
	Journey	Destination	Control	Journey	Destination	Control
<b>Mental imagery</b>						
Clear	5.30 (1.42) <sup>a</sup>	4.79 (1.26) <sup>a c</sup>	5.31 (1.48) <sup>c</sup>	6.01 (1.06)	6.16 (.96)	5.93 (1.05)
Detailed	4.61 (1.48)	4.34 (1.31) <sup>c</sup>	4.83 (1.56) <sup>c</sup>	5.87 (1.06)	5.99 (1.11)	5.74 (1.15)
Concrete	4.73 (1.46)	4.57 (1.36)	5.01 (1.61)	5.97 (1.03)	6.07 (1.02)	5.82 (1.14)
Vivid	5.01 (1.42)	4.67 (1.25)	4.97 (1.57)	5.96 (1.04)	5.99 (.96)	5.78 (1.17)
Long time	3.31 (1.75)	3.66 (1.46)	3.23 (1.69)	2.84 (1.74)	2.81 (1.77)	2.71 (1.50)
Easy	4.96 (1.49)	4.51 (1.44)	5.00 (1.67)	6.00 (1.20)	5.94 (1.27)	5.71 (1.27)
<b>Goal attributes</b>						
Difficulty	5.23 (1.19)	5.06 (1.03)	5.06 (1.37)	4.88 (1.41)	4.87 (1.61)	4.76 (1.41)
Importance	6.06 (1.10)	5.71 (1.25)	5.87 (1.14)	6.20 (.88)	6.38 (1.02) <sup>c</sup>	6.00 (1.18) <sup>c</sup>
Hard work	5.93 (.87)	5.80 (1.06)	5.71 (1.16)	5.74 (1.09)	5.67 (1.50)	5.68 (1.11)
<b>Mood</b>						
Happy	5.60 (1.17)	5.29 (1.11)	5.29 (1.21)			
Cheerful	5.11 (1.40)	5.03 (1.20)	5.10 (1.24)			

*Note.* Means are presented in each cell. *SDs* are presented in parentheses. Symbol <sup>a</sup> denotes a difference between journey and destination, <sup>b</sup> denotes a difference between the journey and control conditions, and <sup>c</sup> denotes a difference between the destination and control conditions.

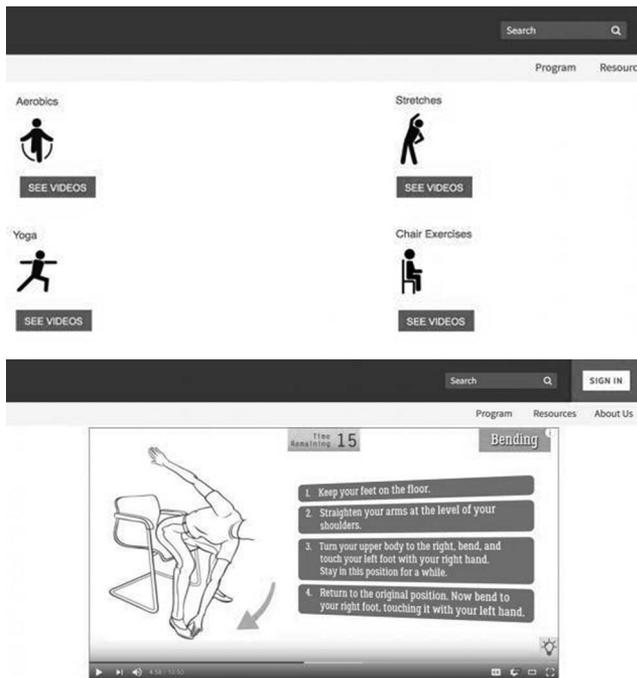
(Appendices continue)

## Appendix C

### One-Month Program Descriptions (Counterbalanced; Study 2)

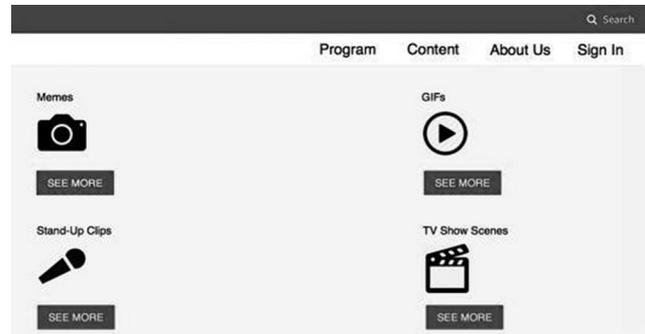
Your first option is a new in-home fitness program that has been developed based on convenience and the latest research on health. This program offers a variety of online videos specialized for in-home exercise, including aerobics, stretches, yoga, and chair-based muscle strengthening and toning (that can also be utilized in the workplace). You can customize the program to meet your fitness needs, and also get feedback on your progress. Many users so far have found the content of this in-home fitness program incredibly helpful in sustaining their daily activity level and overall health!

Below are some examples of the program's content:



Your second option is a new comedic relief program that has been developed based on research that humor can help alleviate stress. This program offers a variety of online comedic images and short clips, including memes, gifs, stand-up comedy excerpts, and funny scenes from TV shows. You can customize the program based on your favorite types of humor. Many users so far have found the content of this comedic relief program quite funny!

Below are some examples of the program's content:



*Note.* There was a Netflix video visual for the comedic relief program, just like the workout video visual for the in-home fitness program. We removed the Netflix visual for copyright reasons.

(Appendices continue)

Appendix D

Financial Tip Examples (Study 4)

## START HERE

WHETHER YOU'RE ATTENDING A TRADITIONAL FOUR-YEAR INSTITUTION, COMMUNITY COLLEGE OR SPECIALIZED TRADE SCHOOL, YOU'RE GOING TO ENCOUNTER A WHOLE NEW SET OF EXPERIENCES — SOME OF THEM FUN, SOME OF THEM CHALLENGING.

LIKE MANY STUDENTS BEFORE YOU, YOU'LL LEARN ABOUT MANAGING YOUR MONEY FROM TALKING TO YOUR FRIENDS AND FAMILY ABOUT THEIR EXPERIENCES, TRYING THINGS OUT AND LEARNING FROM THEM — WHETHER THEY WORK OR NOT — AND GETTING TO KNOW WHO YOU ARE AND WHAT YOU LIKE TO (AND TEND TO) DO WITH YOUR MONEY.

THIS BOOKLET IS A COLLECTION OF 40 MONEY MANAGEMENT TIPS EVERY YOUNG ADULT NEEDS TO KNOW BEFORE HEADING OUT INTO THE REAL WORLD.

National Endowment for Financial Education® (NEFE®)

## TALK TO YOUR PARENTS OR GUARDIANS

**TIP 1**

THINGS ARE MOST LIKELY GOING TO CHANGE ONCE YOU START SCHOOL. BEFORE YOU HEAD OUT ON YOUR OWN, MAKE SURE YOU'RE ON THE SAME PAGE AS YOUR PARENTS OR GUARDIANS.

KNOW HOW FAR THEY'LL EXTEND THEIR SUPPORT.

- How much of your education are you expected to pay for?
- Are they assisting you, how much will they contribute and for how long?
- Will they be helping you out with living costs, too (e.g., assisting with this home or covering your phone bill)?

TALK ABOUT THEIR EXPECTATIONS WHILE YOU'RE AT SCHOOL.

- Do they want you to get a job?
- Do they expect you to maintain a certain GPA or graduate on time?
- Do they require access to your bank account or student charges?

REVIEW THE COSTS OF GOING TO YOUR SPECIFIC SCHOOL.

- Check out education expenses like tuition, books, your dorm and meal plan.
- Review extra fees like insurance, gas and other living costs.

**FINAL NOTE:** Remember, heading you in college is an adjustment for them, too. Your parents are helping you out, make sure they have the information they need to pay bills on time, keep their own records and file their income taxes.

## CONSIDER COST WHEN CHOOSING A SCHOOL

**TIP 2**

DYING FOR A CHANGE OF SCENERY? HOPING FOR A BIG SCHOOL WITH PLENTY OF PEOPLE? IT'S IMPORTANT TO REMEMBER THAT DIFFERENT SCHOOLS HAVE DRASTICALLY DIFFERENT COSTS ASSOCIATED WITH THEM.

If you're still weighing your options, here are some things to consider.

- In state or out of state?**
- Public or private?**
- Two-year or four-year?**
- Driving or flying distance?**
- Expensive or affordable city?**
- Availability of public transportation and student housing?**

There's no saying you can't get creative with your school choices, too. For example, you might find it would save you in the long run to complete your general education classes at a community college, where credit hours are cheaper. Then you could transfer to a pricier university to complete the specialized coursework for your major.

**BOTTOM LINE:** Try not to pick a school just because you love its city or sports team. Put some thought into the costs, and make an informed decision—so it's worth your hard-earned money.

## KNOW THE STORY BEHIND YOUR FINANCIAL NEED

**TIP 3**

ONCE YOU COMMIT TO YOUR SCHOOL OF CHOICE, IT'S TIME TO FIGURE OUT HOW YOU'LL PAY FOR IT. THAT PUTS YOU IN THE SAME BOAT AS A LOT OF THE STUDENT BODY—IN SEARCH OF FINANCIAL AID.

YOU PROBABLY THINK YOUR NEED FOR AID IS PRETTY OBVIOUS—YOU COULD USE ALL THE HELP YOU CAN GET. BUT IT'S ACTUALLY A DEFINED NUMBER THAT'S UNIQUE TO YOU, BASED ON YOUR SCHOOL AND YOUR FINANCIAL SITUATION.

HERE'S HOW IT'S CALCULATED:

Cost of Attendance — Expected Family Contribution = Financial Need

**COST OF ATTENDANCE (COA)**  
Each school has its own tally of the annual educational costs you and your family will incur if you attend. It includes:

- Costs you pay directly to the school for items such as tuition and fees, room and board, and books and supplies.
- General expenses such as transportation and miscellaneous personal expenses.

**EXPECTED FAMILY CONTRIBUTION (EFC)**  
This is an estimate of the amount of resources your family has available to meet your entire COA, and it's generally consistent from one school to the next because each school's COA offers the same set of expenses.

This number is calculated using a series of questions on the Free Application for Federal Student Aid (FAFSA).

**FINANCIAL NEED**  
Whatever's left of your COA after your EFC has been applied is your financial need. Keep in mind that your financial need will differ from one school to the next because each school's COA offers a different set of expenses.

**FINAL WORD:** Although your financial need represents the total amount of aid you can receive, other variables—such as the amount of funding the school has and the types of financial aid you're willing to consider—affect whether you'll reach that maximum.

## START WITH THE BASICS

**TIP 12**

IT'S IMPORTANT TO LEARN THE BASICS OF MONEY MANAGEMENT BEFORE YOU ENCOUNTER THE BIGGER FINANCIAL DECISIONS IN YOUR FUTURE.

If your school doesn't offer a Money 101 course, that doesn't mean you're going to be a financial failure. There are plenty of other places you can go to get a good foundation, and one of them is CashCourse®.

**WHAT'S CASHCOURSE?**  
A free online resource specifically designed for college students, where you can:

- Read articles and watch videos on everything from spending and saving to credit and debt.
- Get answers to your specific financial questions, such as:
  - Is it possible to over-borrow?
  - Should I choose a fixed or a variable rate on a personal loan?
  - How can I finance grad school if I'm still paying regular student loans?
- Translate confusing financial jargon. Use a glossary to learn confusing terms like APR (annual percentage rate) and YTD (year-to-date).
- Run the numbers with interactive financial calculators.
  - How long will it take to pay off my credit card?
  - Should I live on or off campus?
  - What would my loan payments be?
- Make sure you've covered your bases with comprehensive checklists for moving, saving—even adopting a pet.
- Create a monthly budget, adding entries for your specific expenses and saving them online.
- Find stories from other college students about how they've managed their money in college.

**FINAL WORD:** CashCourse doesn't have any ads, sponsors or bias. It's a NEFE-produced guide available at [www.cashcourse.org](http://www.cashcourse.org).

## PUT YOUR MONEY IN THE BANK

**TIP 13**

WHETHER YOU'VE CARRIED CASH ALL YOUR LIFE OR HAD A CHECKING ACCOUNT SINCE YOU BECAME A TEEN, YOU'LL WANT TO FIND A BANKING SOLUTION THAT WILL WORK FOR YOU WHILE YOU'RE IN COLLEGE.

HERE'S WHY:

- It's a lot safer than leaving money in your dorm room or apartment. When your money is in a bank, it's protected by laws and security guards and is federally insured.
- It allows you easy access to your money. You can:
  - Purchase things with a debit card.
  - Withdraw cash at any time from the ATM.
  - Pay bills—such as car insurance, rent and credit card payments—that can't be paid with cash.
- It might help you grow your money. Many banks offer interest-earning accounts such as money market and saving accounts.

**WHEN CHOOSING A BANK OR CREDIT UNION:**  
Ask about accounts and services.

- Does the offer a student or basic checking account with low or no monthly fees?
- Can you get overpaid protection, so you don't get charged for withdrawing too much?
- Does it offer online banking, mobile deposits, text alerts and 24-hour customer service?
- Can you set up automatic transfers or bill-pay services?

**And don't forget about fees.** All it charge penalties for:

- Moving account used?
- Falling below a minimum balance?
- Using an ATM not owned by the bank?
- Having "hard" cash used?

**FINAL NOTE:** Consider your lifestyle and needs. Think about factors such as the bank's location and services and what you need to be able to do with your money. You might even consider an online-only bank (and keep in mind you'll be going to an ATM to face communications).

## USE YOUR CHECKING ACCOUNT RESPONSIBLY

**TIP 14**

MONEY IN THE BANK CAN BE A LITTLE EASIER TO LOSE TRACK OF THAN CASH IN YOUR POCKET. THAT'S BECAUSE YOU NEVER REALLY SEE IT UNTIL IT APPEARS AS A NUMBER ON A RECEIPT OR AN ENTRY ON YOUR STATEMENT.

TO ENSURE YOU DON'T RUN INTO ISSUES, KNOW THE INS AND OUTS OF YOUR CHECKING ACCOUNT AND TAKE ADVANTAGE OF SERVICES THAT MAKE IT EASIER FOR YOU TO TRACK YOUR MONEY.

**KNOW HOW THINGS WORK**  
**Find out when your bank processes transactions.** If you make a purchase on the weekend, will it show up as a pending charge until the bank opens on Monday?

**Be aware of holds on your account.** In some cases—like with a deposit into a hold room—you might have a hold on your account. This means you can't access those funds until they are released.

**SET UP SAFEGUARDS**  
**Make things automatic.** Set up direct deposit for your financial aid and provide and auto bill pay for all your routine services (so you don't forget pay them).

**Take advantage of notifications.** Many banks will email or text you if your account balance is low or something's changed on your account.

**Password protect everything.** Set up different passwords for your online bank account, email address before and if receive any statements or notifications from your bank, smartphone and mobile banking apps.

**PAY ATTENTION**  
**Monitor your spending.** Review your online transactions and be mindful of your account balance at all times (you don't want to spend money you don't have).

**Balance your account each month.** Verify each transaction on your statement and review your spending line by line. You want to make sure you didn't get double-charged somewhere and that your account hasn't been compromised.

**Look out for fraud.**

- Regularly verify your account and billing data to make sure it hasn't changed.
- Watch for unauthorized transactions, especially during periods of heavy debit card use (e.g., the beginning of the school year and the holidays).
- Report any suspicious activity to the bank ASAP, so it can start helping you resolve the situation.

**FINAL WORD:**

- Remember to keep your debit card safe, too.
- Leave it at home if you're prone to losing things or having things fall out of your pocket.
- Be mindful how close you are to your friends or roommates, avoid lending your cards to anyone.
- Leave your cards out of plain sight, even in your room. You can never be too careful about protecting your money.
- Use cash while you're out, so you can avoid having to put down your card to open a tab.

(Appendices continue)

## Appendix E

## Walking Program Daily Check-In Website (Study 5)

# Walking Goal Daily Record Form

The name and photo associated with your Google account will be recorded when you upload files and submit this form. Not [@stanford.edu?](#) [Switch account](#)

\* Required

**Stanford Email Address \***

Your answer

**PLEASE DOUBLE CHECK YOUR EMAIL ADDRESS!** It is crucial that you record it correctly for us to properly account for your responses.

**How many steps did you walk today according to the Pacer App? Please provide ONLY numbers, no text \***

Your answer

**Please upload a screenshot of your step counts!**

ADD FILE

**Any comments?**

Your answer

**What date are you recording steps for with this submission (Please put in MM/DD/YY format)?**

Your answer

GET LINK

Never submit passwords through Google Forms.

*(Appendices continue)*

**Appendix F****Performance Scales Used in the Executive Program in Africa (Study 6)**

1. I have made changes to my supply chain that will help my company scale.
2. My leadership style is promoting employee innovation.
3. I have created new products and/or services that increase my company's market share.
4. My company has adopted accounting practices preferred by top-tier investors.
5. I have implemented a governance structure that supports the growth of my company.
6. I have made changes to my business that can accelerate its growth.
7. I have developed a coherent strategy that will enable my company to grow.
8. I have created a business model to achieve important corporate objectives.
9. I have effectively managed my company's capacity and expansion.
10. I have created an effective marketing strategy.
11. I have transformed my business into a market leader.
12. I have overcome challenges related to growing my business.

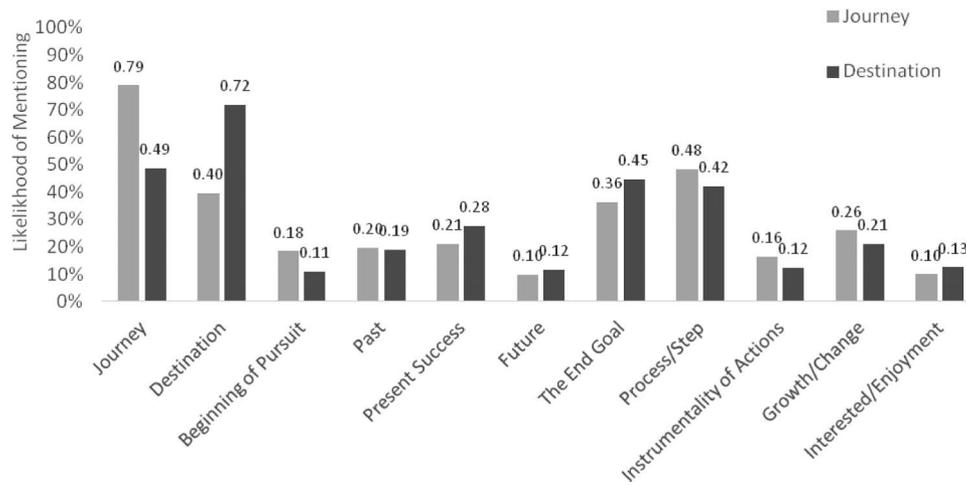
*(Appendices continue)*

## Appendix G

## Content Coding for Journey and Destination Conditions (Studies 1–5)

	Journey	Destination	Statistics
Journey	.79 (.36)	.49 (.40)	$F(1, 849) = 137.92, p < .001, \eta^2 = .140$
Destination	.40 (.38)	.72 (.35)	$F(1, 849) = 167.83, p < .001, \eta^2 = .165$
Beginning of pursuit	.18 (.35)	.11 (.27)	$F(1, 849) = 12.92, p < .001, \eta^2 = .015$
Past	.20 (.27)	.19 (.27)	$F(1, 849) = .18, p = .672, \eta^2 = .000$
Present success	.21 (.30)	.28 (.33)	$F(1, 849) = 9.46, p = .002, \eta^2 = .011$
Future	.10 (.24)	.12 (.26)	$F(1, 849) = 1.14, p = .285, \eta^2 = .001$
The end goal	.36 (.39)	.45 (.40)	$F(1, 849) = 9.50, p = .002, \eta^2 = .011$
Process/step	.48 (.41)	.42 (.42)	$F(1, 849) = 4.53, p = .034, \eta^2 = .005$
Instrumentality of actions	.16 (.29)	.12 (.25)	$F(1, 849) = 5.07, p = .025, \eta^2 = .006$
Growth/change	.26 (.39)	.21 (.32)	$F(1, 849) = 4.22, p = .04, \eta^2 = .005$
Interest/enjoyment/fun	.10 (.25)	.13 (.27)	$F(1, 849) = 2.00, p = .16, \eta^2 = .002$

Note. Means are presented in each cell. SDs are presented in parentheses.



Received March 14, 2018  
Revision received March 5, 2019  
Accepted March 26, 2019 ■