All Roads Lead to Rome: The Impact of Multiple Attainment Means on Motivation

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Individuals have different concerns before and after they become relatively certain about a goal's attainability; hence, we propose that the presence of alternative means of goal attainment will have a distinctive impact on motivation, depending on their stage of goal pursuit. In the initial stage of goal pursuit, people are concerned about *whether* the goal is attainable. The presence of multiple attainment means (vs. a single means) makes the goal seem more easily attainable and thus leads to greater motivation. Conversely, when people have made substantial progress on the goal and its attainment is relatively secured, they focus more on *how* they can race to the end and complete the pursuit. At these times, a single means (vs. multiple means) provides a more straightforward action plan and in turn leads to greater motivation. Two field studies and 3 lab experiments support this theorizing.

Keywords: motivation, goal progress, attainment means

Goals, as cognitive representations, are interconnected with their respective attainment means (Bargh, 1990; Kruglanski, 1996; Kruglanski et al., 2002). For instance, a fitness goal is associated with behaviors that can actually help one achieve this goal, such as maintaining a healthy diet and exercising regularly (Aarts & Dijksterhuis, 2000; Bargh & Gollwitzer, 1994; Shah & Kruglanski, 2003). While some goals can be achieved through only a single means, others offer greater flexibility and allow multiple means of attainment. For example, in many frequent flyer programs, while the elite status can only be achieved through flying with the airline, free flights in the same program can be earned through multiple complimentary means, such as flying with the airline, receiving points transferred from others, shopping at designated grocery stores, and renting cars from partner companies.

Conventional wisdom suggests that the more means that are available for people to attain a goal, the more likely they will be to adopt the goal. For instance, fundraising organizations arrange multiple channels through which people can make donations and hope that the availability of multiple means can encourage greater contribution. However, does this wisdom always hold true? When it comes to the number of alternative means for goal attainment, is it always "the more the merrier?" More generally, we ask the questions of how the presence of multiple means for goal attainment influences people's motivation in pursuing the goal and whether these impacts remain the same at different stages of goal pursuit.

We propose that because people focus on different aspects of goal pursuit at the initial versus the advanced stages of the pursuit, the presence of multiple attainment means may either increase or decrease people's motivation. Specifically, when people are at the initial stage of goal pursuit (e.g., just started to train for marathon), they focus primarily on *whether* the goal is attainable and derive motivation from the perceived attainability. Compared with having a single attainment means, the presence of multiple complementary means makes the goal seem more easily attainable and hence induces greater motivation for the pursuit. However, when people have made substantial progress on a goal and its attainability is relatively secured, they focus more on *how* they can finally attain the goal and complete the pursuit. Compared with multiple means, a single means provides a more straightforward roadmap for people to "race to the end," making the goal seem more easily attainable, which in turn leads to greater motivation. Combining these two propositions, we hypothesize that while the presence of multiple attainment means to a goal increases people's motivation at the initial stages, it may lower their motivation at more advanced stages of the pursuit. In addition, such distinctive motivational consequences are caused by the differences in people's dominant concerns at a given moment.

We organize the remainder of the article as follows: We review research that leads to our prediction that the presence of multiple means for goal pursuit may either increase or decrease people's motivation. We then test this hypothesis in five studies that manipulate both people's relative positions in goal pursuit and the number of means that they can use. We conclude by addressing the theoretical contributions of these findings for understanding the dynamics of motivation and the implications for real-world practices.

Pursuing an Attainable Goal

At the initial stages of goal pursuit, people face many uncertainties, particularly whether they can successfully attain their focal goal. For example, for a person who just started pursuing a fitness goal, he is likely to question whether he could shed away enough pounds to reach the ideal weight, and thus he may be hesitant to invest further effort until he is more certain about its attainability. Indeed, prior literature has provided ample support for the importance of goal attainability in determining motivation. For example, research on self-efficacy emphasizes the role of one's sense of being able to achieve a desired outcome in predicting one's persistence and effort investment in the task (Bandura, 1982, 1997; Bandura & Wood, 1989; see also action-outcome expectations, Heckhausen, 1977). An attractive, yet unattainable goal is unlikely to elicit motivation. People's motivation, in turn, depends on the assessment of goal expectancy, which involves contemplation of whether one can attain the desired end state through actions and whether the context facilitates or impedes the pursuit (Liberman & Förster, 2008). For instance, the social-cognitive model (e.g., Bandura, 1997) suggests that a person's willingness to adopt a goal increases as the belief that the goal can be attained increases. Similarly, the goal-setting theory (Locke & Latham, 1990) suggests that individuals are more likely to strive hard for goals that are within reach through effort yet remain moderately challenging.

Since initiating the pursuit of a goal reflects one's conscious decision to commit to a goal with the expectation of eventual attainment, whether a goal is perceived to be attainable is crucial for people at this initial stage of pursuit. At these times, people actively seek information to confirm the attainability of the goal, and their motivation should depend primarily on their inferences on the goal's attainability (Huang & Zhang, 2011). Goals with higher attainability, therefore, would induce greater motivation (Bandura, 1982; Bandura & Pervin, 1989; Lewin, 1951; Mischel, Cantor, & Feldman, 1996).

Compared with a goal that is served by a single means, a goal that can be attained through multiple complementary means suggests higher flexibility in the pursuit, allowing people to maximize the effectiveness of their effort, and as a result, leads to the perception that the goal is more easily attainable, increasing people's motivation in the pursuit. For example, Kruglanski, Pierro, and Sheveland (2011) found that greater number of equifinal means enhances individuals' commitment to a goal through greater expectancy of goal attainment. Consider, for instance, if a person believes that she can lose weight not only through dieting Plan A but also through dieting Plans B and C, she should be more likely to begin dieting because it offers higher promise of helping her reach the ideal weight. Similarly, a salesperson would be more likely to accept a challenging sales goal if it could be reached by combining sales from multiple channels, since it offers greater chance of final attainment. Therefore, we suggest that at the initial stages of goal pursuit, the presence of multiple means would induce the feeling that the goal is more easily attainable, leading to greater motivation and effort in the pursuit.

Of particular importance to our theorizing is the Action-Phase Model (Heckhausen, 1977; Heckhausen & Gollwitzer, 1987). This model provides a temporal perspective on individual goal pursuit and makes the important distinction between different phases in pursuing a goal. In this model, the evaluative assessment of whether a goal is worth pursuing occurs in the predecisional stage, which is followed by planning and the actual goal pursuit and, finally, the postcompletion evaluation. These distinctions highlight the activities that people engage in at different phases of goal pursuit and emphasize the importance of goal expectancy in the early stages of goal pursuit.

Our present conceptualization builds on this model and assumes that while the concern for goal expectancy plays a critical role in people's goal adoption decisions (Gollwitzer, 1990; Lewin, 1951), this consideration does not immediately vanish when people set their mind on a chosen goal. In many cases, individuals adopt goals with a vague belief that the goal might be attainable and continue to derive motivation from the assurance that they can indeed accomplish the goal until they are relatively certain that the end point is within reach. We therefore broadly define the initial stage of goal pursuit as the phase when people are questioning the goal's attainability and are motivated by the belief that the goal is attainable (Huang, Zhang, & Broniarczyk, 2012; Koo & Fishbach, 2008). This stage may involve the predecisional phase and, importantly, part of the actual pursuit of the goal. Accordingly, we assume that the presence of multiple attainment means is motivating not only prior to people's adoption of a goal but also in the early stage of actual pursuit as long as people remain uncertain of the goal's attainability.

Racing to the End

However, the concern over goal attainability is unlikely to dominate throughout the entire course of goal pursuit. As people accumulate progress and move within reasonable distance from the end point, they become relatively certain that they can indeed attain the goal (e.g., Liberman & Förster, 2008; Wood & Bandura, 1989). For example, compared with people who have just begun the pursuit of the fitness goal, those who have already shed 10 pounds will be more confident that they can actually reach the ideal weight. Accordingly, people at these advanced stages of goal pursuit become less concerned about the goal's attainability and no longer derive motivation from the perception that they can reach the end point (Zhang & Huang, 2010).

What, then, drives people's motivation at these advanced stages of goal pursuit? A large body of research on Goal Gradient Theory and "goal looms larger effect" has observed that people's motivation in goal pursuit increases as they move closer toward the goal's end state (e.g., Hull, 1932; Liberman & Förster, 2008). It follows that people at the more advanced stage of goal pursuit are motivated to reduce the remaining gap effectively; thus, a "race to the end" ensues as people see a given goal in their reach (Carver & Scheier, 1998). For example, the literature on the dynamics of self-regulation suggests that, once people's commitment to a goal is certain, they are motivated by the remaining discrepancy, such that people are driven to invest effort to close the remaining gap (Fishbach, Zhang, & Koo, 2009; Koo & Fishbach, 2008).

If eliminating the remaining discrepancy toward goal attainment is the primary concern at this point, individuals should be motivated by a clear roadmap for *how* to attain the final end point. The presence of multiple means becomes an impediment at this stage because it makes answering this question more difficult and adds confusion to the execution of goal pursuit (i.e., disrupting the

efficient execution of a given goal). By comparison, a straightforward path that can effectively get people to the end point eliminates the presence of disrupting choices and should make the goal seem more easily attainable, leading to greater motivation.

Prior research offers ample support for the notion that options in goal pursuit may result in decreased performance. For example, the influential theory on implementation intentions (e.g., Gollwitzer & Brandstätter, 1997) is built on the thesis that a single situation-action association facilitates goal pursuit because the presence of multiple means ("opportunities to act") may inhibit the performance of goal-congruent behaviors. Based on this theory, relatively inflexible stimuli-action associations are facilitative of goal pursuit because these associations allow individuals to capture the right moment to act and prevent factors that may potentially derail goal pursuit, such as excessive deliberation and second thoughts.

From an implemental perspective, to advance on a goal that is served by multiple means, one needs to consider and evaluate all possibilities before committing to a particular course of action, which complicates the process of goal pursuit. This is particularly a problem when the choice among the available means is difficult, such as when the choice options are plenty (Schwartz, 2004a, 2004b) or are similarly attractive (e.g., Shafir, Simonson, & Tversky, 1993). In these cases, people may even resort to actions that are inconsistent with advancing on the goal, such as searching for new alternatives or simply not to choose (Shafir et al., 1993; Shafir & Tversky, 1992). In contrast, a single yet effective attainment means at the advanced stages of goal pursuit provides one action plan that facilitates goal attainment, which simplifies goal pursuit and in turn induces greater motivation (Gollwitzer, 1999). For example, for people who try to lose a few more pounds to eventually reach the ideal weight, instead of providing multiple dieting plans (e.g., dieting Plans A, or B, or C), having only one specific way to make progress on this fitness goal (e.g., just follow one dieting plan) specifies an effective route that leads to the attainment of the ideal weight and simplifies the pursuit, making the goal seem more easily attainable and hence inducing greater motivation.

One central proposal in our theorizing is that people interpret the contexts and make inferences to address their primary concerns at the moment. In the initial stages of goal pursuit, people question *whether* they can accomplish the goal and derive motivation primarily from the belief that the goal is attainable. The presence of additional means at this stage, while not objectively simplifying the process, addresses the crucial concern and elicits greater motivation by assuring people that the goal is attainable. When people move to more advanced stages of goal pursuit, goal attainability is no longer a concern and people focus instead on what they need to do to reach the end point (i.e., *how* to eliminate the remaining discrepancy). The presence of additional attainment means at this stage complicates the answer to this primary question and, ironically, makes the pursuit more difficult. The distinctive concerns that characterize different stages of goal pursuit, therefore, determine the impact of additional attainment means on motivation.

We report five studies that test our hypothesis. These studies vary people's stages of goal pursuit (initial stage vs. advanced stage) and the number of available means for them to pursue the focal goal (single means vs. multiple means) and measure their subsequent motivation. The first two field experiments (a loyalty program and a blood donation drive) show that while the presence of multiple attainment means increases motivation early on, it dampens motivation at the more advanced stages of pursuit. Study 3 directly tests the role of goal attainability in shifting the motivational consequences of multiple attainment means. Finally, Study 4 and Study 5 tap into the proposed mechanisms and assess the inferences people make based on the number of means in goal pursuit; Study 5 further explores how these inferences impact people's motivation.

Study 1: Joining a Customer Loyalty Program

In this study, we distributed four different versions of invitations for a loyalty program at a local coffee shop. We varied the number of points with which people would start the program and the perceived number of ways through which they could earn points toward the reward. We measured people's motivation by tracking how many of them made the effort to join the program.

Method

This field experiment used a 2 (stage of goal pursuit: initial vs. advanced) × 2 (number of means: single vs. multiple) between-subjects design. We handed out invitations to people at a local coffee shop and described a loyalty program that we were about to launch. This loyalty program required people to accumulate 12 stamps on a loyalty card within 6 weeks to redeem for a free coffee and cookie combo.

We manipulated the stage of goal pursuit by varying the number of free stamps people would have when they started the program. Depending on the condition, the invitation explained that people who joined the program would start collecting stamps either from the first box (initial stage conditions) or from the seventh box, with the first six boxes already stamped (advanced stage conditions). We explained to those who received six free stamps that this was a promotion offered by the coffee shop. A sample card was printed on the invitation to visually illustrate what each person's stage of the pursuit would be like if they joined the program (12 empty boxes for initial stage conditions vs. six boxes already stamped for advanced stage conditions).

Next, we manipulated the number of different attainment means people had by changing their perception that they either had one or multiple ways to earn stamps. Specifically, in the single means conditions, the rules of point accumulation stated that buying a Java drink would earn a stamp. In contrast, in the multiple means conditions, the rules stated that one could earn a stamp by buying a Java coffee, a Java tea, or any other Java drink. Although the actual rule was the same across conditions (each drink purchase would earn a stamp), people in the multiple means conditions were under the impression that they had more ways to earn stamps, as compared with those in the single means conditions. Images were printed on invitations to highlight the difference in the number of means: While people in the single means conditions saw one generic paper cup with the store logo, those in the multiple means conditions saw three images: a coffee, a tea, and a generic store-labeled paper cup.

The invitation emphasized that people who would like to join this loyalty program would need to bring the invitation back to the coffee shop on the following Wednesday (the launch day of the

program) to receive their actual card. We distributed a total of 386 invitations among customers of this coffee shop and recorded how many of them in each condition returned with the invitation on the following Wednesday as a proxy for their motivation to join the program.

Our key dependent measure was the number of people who came back to join the loyalty program. We chose this measure under the assumption that individuals' motivation needs to reach a certain level for them to return to the store; therefore, the frequency measure captures the number of people whose motivation is above that threshold and indicates the general level of motivation in the group.

Results and Discussion

On the launch date, a total of 121 customers came back to join the program (a return rate of 31.3%). To analyze how the number of available means influenced customers' motivation at initial versus advanced stages of goal pursuit, we conducted a logistic regression model of return rate on the stage of the pursuit, number of means, and their interaction term. The analysis yielded the predicted Stage of Goal Pursuit × Number of Means interaction ($B = 0.69$), Wald's $\chi^2(1, N = 386) = 9.57$, $p < .01$. There were no other effects in this analysis. Further chi-squared analyses revealed that among the customers who would start the program with zero stamps, those who believed that there were multiple ways to earn stamps were more likely to join the program ($M = 37.5\%$, $SD = 48.7\%$) than those who believed that there was only one way to earn stamps ($M = 21.6\%$, $SD = 41.4\%$), $\chi^2(1, N = 193) = 5.83$, $p < .05$. In contrast, among customers who would start the program with six stamps already affixed on the card, those who believed that there was only one way to earn stamps were more likely to come back and claim the card ($M = 40\%$, $SD = 49.3\%$) than those who believed that there were multiple ways ($M = 26.5\%$, $SD = 44.4\%$), $\chi^2(1, N = 193) = 3.95$, $p < .05$ (see Figure 1).

This study provided initial evidence for our proposed theory that the perception of a greater number of means in goal pursuit may increase motivation at the initial stages of goal pursuit but decrease motivation at more advanced stages. Note that in this study we measured whether people made the effort to join the program, rather than their actual purchase behaviors after getting loyalty

cards, to avoid the possibility that people who started the program with high progress and had multiple means to attain the goal came back less often simply because they had an objectively easier task and hence showed greater procrastination. In other words, they might delay their purchases not because they are not motivated but because they could afford to do so. By measuring people's behavior in joining the program, we were able to bypass this problem and more accurately assess their motivation.

That said, we felt that it would further strengthen our empirical evidence to demonstrate that people's motivation leads to actual actions that advance the pursuit of the goal. Therefore, we conducted another field experiment and directly measured people's actual goal-pursuit actions.

Study 2: Blood Donation Drive

As demonstrated in prior research (e.g., Koo & Fishbach, 2008; Williams & Karau, 1991), the progress on a collective goal (i.e., the progress made by others in the community) can function like the progress on an individual goal and has a similar impact on motivation. Therefore, in Study 2, we tested our hypothesis in the context of pursuing a prosocial, collective goal and collaborated with the local blood bank to organize a blood donation drive on campus. We varied the information that people received about the current progress on the goal and the number of different means they had to pursue this collective goal and measured how many of them committed to donate their blood.

Method

Participants. We approached a total of 451 individuals (246 female, 205 male) for the blood donation drive. Our sample consisted of undergraduate students, graduate students, and staff members on the campus of the University of Texas at Austin.

Procedure. This field experiment used a 2 (stage of goal pursuit: initial vs. advanced) × 2 (number of means: single vs. multiple) between-subjects design. We approached potential donors with campaign letters. The campaign letter first described a case of how the blood collected by the blood bank saved the life of a local girl who was diagnosed with acute myeloid leukemia at age 2. It then explained the mission of the organization and described a current blood donation drive on campus. People read either that we were about to launch this blood donation drive and aimed to collect 100 pints of blood (initial stage conditions) or that we had been running the campaign for a while and had collected 80 pints of blood; thus, we just needed another 20 pints of blood to reach our goal of 100 pints (advanced stage conditions).

Participants continued to read about the specific time and location of this blood donation drive. We manipulated this information so that in the single means conditions, the letter stated that the drive would be conducted on November 16, for "ONE DAY ONLY, from 9 a.m. to 5 p.m." In the multiple means conditions, in contrast, the letter stated that the drive would be held on November 16 and that "there will be three different shifts in which you can donate your blood: Shift A from 9 a.m. to 12 p.m., Shift B from 12 p.m. to 2 p.m., and Shift C from 2 p.m. to 5 p.m.." Although the actual duration of the drive was exactly the same across conditions, participants in the multiple means conditions were led to believe that there were multiple opportunities (i.e.,
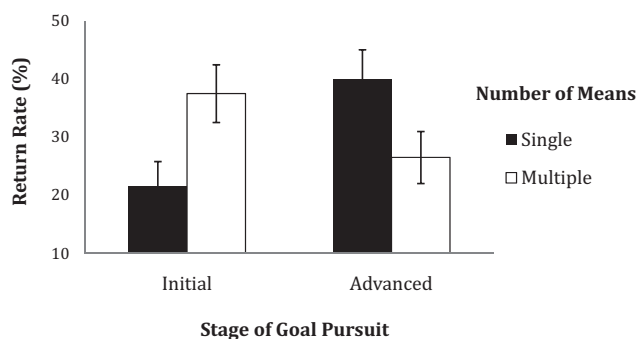

Figure 1. Return rate as a function of stage of goal pursuit and number of means (Study 1). Error bars represent 1 standard error (*SE*) for the respective conditions.

three separate time slots) for them to donate, whereas those in the single means conditions believed that there was only one means (i.e., one day) to do so. Participants were then urged to visit the sign-up web site to learn more about the campaign and become a donor.

In addition, we provided participants with a business-card-sized contact information card corresponding to their experimental conditions and urged them to help us distribute the cards to their friends and tell them about the blood donation drive. We then asked the participants how many cards they would like to take with them. Participants could reply "0" if they did not want any cards. Hence, in this study, we were able to get two separate measures of participants' motivation to help attain the campaign goal of collecting 100 pints of blood: the number of contact cards they were willing to help distribute to other people and the number of participants who signed up and initiated the eligibility check for blood donation (i.e., a screening survey on medical history and other eligibility-related questions).

Because there was a set of specific requirements for blood donors (e.g., over the weight of 123 pounds), a large number of our potential donors who initiated the screening process were ineligible for this particular campaign. Those who were eligible to donate (52 participants in total) were then redirected to the scheduling page to reserve a specific time slot. Forty-seven of them showed up on the scheduled date and donated blood to the blood bank.

Results and Discussion

We first analyzed the number of visits to our sign-up page (to initiate the eligibility check) as a proportion of the number of people we approached in each condition—this percentage (i.e., sign-up rate) indicated people's motivation to help attain the goal in the blood donation drive. Based on our hypothesis, people's motivation would be influenced by the number of means they had to donate and the current stage of the campaign. Therefore, we conducted a logistic regression of the sign-up rate on the stage of the pursuit, number of means, and the interaction between them. The analysis yielded the predicted Stage of Goal Pursuit × Number of Means interaction ($B = 0.56$), Wald's $\chi^2(1, N = 451) = 8.60$, $p < .01$. There were no other effects in this analysis. Among the people who thought we had yet to kick off this campaign, those who were told that there were three separate shifts were more likely to sign up ($M = 62.0\%$, $SD = 48.7\%$) than those who were told that the drive was 1 day only ($M = 49.6\%$, $SD = 50.2\%$), $\chi^2(1, N = 248) = 3.85$, $p = .05$. In contrast, among those who thought we had already made substantial progress on reaching the campaign goal, those who were told that the drive was 1 day only were more likely to sign up ($M = 61.0\%$, $SD = 49.0\%$) than those who were told that there were three separate shifts ($M = 45.6\%$, $SD = 50.1\%$), $\chi^2(1, N = 203) = 4.81$, $p < .05$ (see Figure 2).

Of additional interest to us was the number of cards people were willing to help distribute to their friends. The more motivated people were to help attain the campaign goal, the more cards they would distribute to further promote the event; as hypothesized, this motivation measure would be influenced by the number of means offered in the pursuit, and the direction of the impact would depend on the current stage of the campaign. Therefore, we conducted a 2 (stage of goal pursuit: initial vs. advanced) × 2 (number of means: single vs. multiple) factorial analysis of variance
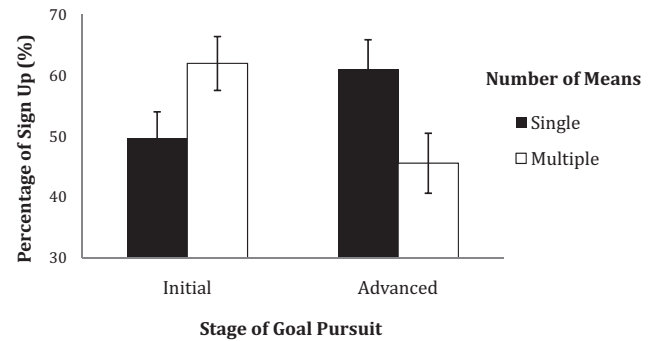

Figure 2. Percentage of sign up as a function of stage of goal pursuit and number of means (Study 2). Error bars represent 1 standard error (*SE*) for the respective conditions.

(ANOVA) on the number of cards and found a significant Stage of Goal Pursuit × Number of Means interaction, $F(1, 447) = 11.84$, $p < .01$, and no main effects. When participants believed that we had yet to kick off the campaign, those who believed that there were three separate shifts took more cards ($M = 2.26$, $SD = 6.50$) than those who thought there was only one opportunity to donate ($M = 0.46$, $SD = 1.65$), $t(246) = -3.02$, $p < .01$. Conversely, in the condition in which we had already collected 80 pints of blood, people who were told that there would be only one opportunity to donate took more cards ($M = 2.47$, $SD = 6.85$) than those who thought there were three separate shifts available ($M = 1.00$, $SD = 3.44$), $t(201) = 1.94$, $p = .05$ (see Figure 3). Because only 14.6% of all participants were willing to help distribute cards to their friends and the data may be skewed, we also analyzed this measure using a Tobit model with zero (no card) as the lower limit. The results reflected a consistent Stage of Goal Pursuit × Number of Means interaction ($B = -4.54$), $t(446) = -3.02$, $p < .01$; in the initial-stage conditions, the presence of multiple timeslots was a positive predictor of the number of cards participants took with them ($B = 4.57$), $t(446) = 2.23$, $p < .05$, but it became a negative predictor in the advanced-stage conditions ($B = -4.51$), $t(446) = -2.10$, $p < .05$.

Results from the two field studies provided consistent support for our hypothesis that the perception of a greater number of attainment means may increase or decrease people's motivation for pursuing a goal, depending on the stage of their pursuit. We suggest that this happens because people's concerns shift from *whether* they can accomplish the goal to *how* to complete the goal once the accumulated progress at the advanced stage of pursuit assures the goal's attainability. In our next study, we test this proposed mechanism by varying the point at which people become relatively certain that they can attain the goal and investigate how this shift interacts with the number of available means to impact motivation.

Study 3: Movie Rating

In Study 3, we created movie-rating sites and invited undergraduate students to be our "movie critics." These movie critics built their raters' profiles in the lab and were led to believe that they either had not started accumulating critic points or had earned a number of points by building the profile and thus were approach-
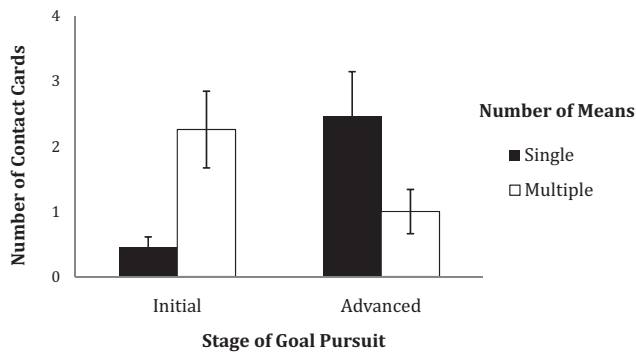
Figure 3. Number of contact cards as a function of stage of goal pursuit and number of means (Study 2). Error bars represent 1 standard error (*SE*) for the respective conditions.

ing the total number of points required for the reward. We then manipulated the number of means people could employ to reach the goal by varying the number of websites they can access to review movie clips; instead of manipulating the perceived number of means (e.g., Study 1 and 2), in this study we directly manipulated the actual number of means people had when pursuing the goal. We measured how frequently these movie critics logged into the movie-rating site(s) as an indicator of their motivation to win the reward.

To directly test our proposed mechanisms, we included four additional conditions, in which we intervened to directly change participants' perception of the goal's attainability. For half of the critics who had yet to start accumulating points, we confirmed their goal attainability and expected them to behave just like those at the advanced stages—to focus on *how* they could complete the pursuit and thus be motivated by a single (vs. multiple) means. Conversely, we also made goal attainability uncertain for half of the critics who were already at advanced stages of pursuit and expected them to behave like those at the initial stages—to worry about *whether* they could attain the goal and thus be motivated by multiple (vs. a single) means.

Method

Participants. A total of 307 undergraduate students at the University of Texas at Austin agreed to be our movie critics and to participate in this study.

Procedure. In this study, we used a 2 (stage of goal pursuit: initial vs. advanced) × 2 (number of means: single vs. multiple) × 2 (certainty of goal attainability: natural vs. intervened) between-subjects design. All participants built their movie critic profile and received experimental information in the lab, and they completed the study during their leisure time outside the lab.

The cover story informed participants that we were working with a movie rating website to help them establish effective market segmentation. Specifically, we invited students to be "movie critics" and to watch movie clips on the test site. All movie critics were given a personal identification number and a password, and they would need to log into the movie-rating site during a 3-day period (from Sunday midnight to Wednesday midnight) to watch clips and provide their ratings for these samples. They could rate

as many clips as they wanted to, and they would earn points for the clips they rated. We told participants that for each clip they reviewed, they would receive a certain number of points (depending on the type and duration of the clip). If they could reach 300 points by Wednesday at midnight, they could earn two tickets for an upcoming movie premiere event in town. We further informed them that clips would be posted at a random interval, according to when the clips became ready to be rated, and that a clip would be taken down from the server once 30 critics had provided their reviews. Therefore, the more frequently a movie critic checked the movie-rating site for new postings, the more likely he or she would be to earn enough points for the reward.

Before they started reviewing movie clips, all movie critics were asked to build a profile in the lab. Therefore, all critics completed a long survey that included demographic and general preference questions, and they also rated a series of stimuli (e.g., music samples and movie trailers) to build their profile. Upon finishing, movie critics were told that they had successfully built a movie critic profile. For those in the initial stage conditions, we thanked them for building the profile. For those in the advanced stage conditions, we thanked them for building their profile and informed them that we would give them 200 points to show our appreciation for their effort in building their profile and rating our sample stimuli. Therefore, these participants needed only an additional 100 points to reach 300 points for the reward.

To test our proposed mechanisms, we provided additional information in goal-attainability-intervened conditions: We told half of the critics in the initial stage conditions that, on the basis of our past experiences, most of the critics eventually reached 300 points for premiere tickets; in contrast, we also told half of the critics in the advanced stage conditions that, on the basis of our past experiences, only a few critics eventually reached 300 points for the reward, even though many of them could get close. This design allowed us to examine what naturally occurred when one first started the pursuit versus when one approached the end point (natural conditions), as well as what happened when goal attainability was confirmed early on, or was made uncertain at the advanced stage of goal pursuit (intervened conditions).

We then manipulated the number of means by telling the critics that they would have access to either one rating site for all movies (single-means conditions) or three different sites for different movie categories (multiple-means conditions). People in the multiple means conditions were further told that the points they earned in all three sites would all count toward their total for the reward. All critics went on to answer a few filler surveys and left the lab.

We e-mailed critics a reminder and their individual login information before the program was put online. To control for potential variation of critic points that one could earn during the 3-day period, we did not actually post any clips during this period of time. Whenever participants logged in, they would see a processing bar and then a notification page saying that "There is no movie clip available at this moment. Please come back to check the postings later." We reasoned that the number of times people kept coming back even though they were unable to find any clips on the previous attempt would indicate their motivation level in earning more points and recorded the date and time when each of them logged into the rating site(s) to obtain a frequency measure. After the experiment was completed, all participants were debriefed via e-mail and offered compensation.

Results and Discussion

Our main interest was the total number of times that the movie critics logged into the rating site(s) to check for new clips during the 3-day period of time. Because a substantial number of participants did not visit any of the sites at all (53% on average), we analyzed the data using a Tobit model (Greene, 2003), with zero (no visit) as the lower bound. We first examined the whole sample using the stage of goal pursuit (initial vs. advanced), number of means (single vs. multiple), certainty of goal attainability (natural vs. intervened), and all their interaction terms as predictors. The analysis first yielded a main effect of certainty of goal attainability ($B = -2.08$), $t(298) = -2.41$, $p < .05$, such that when there was intervention on the certainty of goal attainability, participants were less motivated to log into the site(s). More importantly, this main effect was qualified by the hypothesized Stage of Goal Pursuit × Number of Means × Certainty of Goal Attainability three-way interaction ($B = 3.54$), $t(298) = 4.12$, $p < .01$. To explore this three-way interaction, we then conducted separate analyses depending on whether people received interventions on the certainty of goal attainability.

We first examined the participants who were not provided with direct information on goal attainability to explore what naturally happens as one moves from the initial to the advanced stages of goal pursuit (goal-attainability-natural conditions). We included stage of goal pursuit, number of means, and their interaction term into the model, and the Tobit model was run with zero (no visit) as the lower bound. The analysis yielded the predicted Stage of Goal Pursuit × Number of Means interaction ($B = -1.61$), $t(159) = -3.51$, $p < .01$. There were no main effects in this analysis. Subsequent contrast analyses revealed that, among the critics who had yet to start point accumulation, those who believed that they could earn points at three different websites logged into the sites moderately more often ($M = 2.40$, $SD = 3.64$) than those who could earn points at only one site ($M = 1.08$, $SD = 2.25$; $B = 1.08$), $t(159) = 1.66$, $p < .10$. In contrast, among participants who were given 200 points to start, those who believed that they could earn points at a single site checked the postings more frequently ($M = 2.67$, $SD = 3.61$) than those who had three sites ($M = 1.00$, $SD = 1.86$; $B = -2.14$), $t(159) = - 3.34$, $p < .01$ (see Figure 4).

We then examined the conditions in which we intervened participants' certainty of goal attainability to test our proposed mechanism. Following prior procedures, we included stage of goal pursuit, number of means, and their interaction term into the model, and the Tobit model was again run with zero (no visit) as the lower bound. The analysis yielded the predicted Stage of Goal Pursuit × Number of Means interaction ($B = 6.35$), $t(138) = 2.55$, $p = .01$. There were no main effects in this analysis. According to our theorizing, people shift their concerns from whether the goal is attainable to how to attain the goal once they feel that the attainment of the goal is relatively secured. Therefore, as long as goal attainability remains uncertain, having multiple (vs. a single) means should be more motivating regardless of one's progress level on the goal. Similarly, as long as people are relatively certain about their chances of attaining the goal, having a single (vs. multiple) means should provide a straightforward roadmap to attainment, and thus be more motivating, even at initial stages of the pursuit. Subsequent contrast analyses confirmed this hypothesis. We first examined the movie critics at the initial stages of the pursuit that were assured that the goal was attainable; we found that the movie critics who believed that they could earn points at a single website checked the postings more frequently ($M = 1.91$, $SD = 4.33$) than those who had three websites ($M = 0.42$, $SD = 1.73$; $B = -5.14$), $t(71) = -3.32$, $p < .01$ (see Figure 4). On the other hand, among participants who were at the advanced stages of goal pursuit but were told that goal attainability was still quite uncertain, those who believed that they could earn points at three different websites logged back into the sites more frequently ($M = 4.75$, $SD = 16.08$) than those who were offered a single website to earn points at ($M = 0.84$, $SD = 3.05$; $B = 2.75$), $t(68) = 1.91$, $p = .056$ (see Figure 4). In short, these movie critics, who had already accumulated substantial progress but were still uncertain about goal attainability, behaved similarly to those who were still far from the end point.

Combined, the results of Study 3 supported our hypothesized mechanism and showed that the presence of multiple (vs. a single) attainment means may either increase or decrease people's motivation, depending on their primary concerns in the pursuit, which relies on their perceived certainty of goal attainment. This perception, as we demonstrated, could be naturally influenced by their relative stage in goal pursuit or be directly changed by providing extra information about the task.

Study 4: Inferences Based on the Number of Movie-Rating Sites

Essential to our theorizing is that while the presence of multiple means made the goal seem more easily attainable at the initial stages of pursuit when people were concerned about goal attainability, it inversely made the same goal, ironically, seem more difficult at the advanced stages of pursuit when people wanted to race to the end. We thus conducted Study 4 to investigate whether the number of means (single vs. multiple) indeed influenced the perceived difficulty in attaining the goal, depending on one's present stage in the pursuit, instead of changing people's perceived complexity of the task, satisfaction with current progress, or mood.

Method

Participants.   We used the same movie-rating study paradigm in Study 3, and invited a total of 133 undergraduate students at the University of Texas at Austin to participate in this experiment that was professed to "pretest a movie rating database."
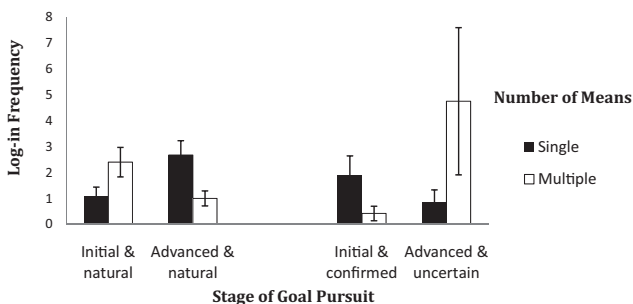

Figure 4.   Log-in frequency as a function of stage of goal pursuit, number of means, and goal attainability (Study 3). Error bars represent 1 standard error (*SE*) for the respective conditions.

Procedure. We adopted a 2 (stage of goal pursuit: initial vs. advanced) $\times$ 2 (number of means: single vs. multiple) design. All critics followed similar procedures in Study 3 to build their profiles, received 0 (initial stage) or 200 (advanced stage) points to begin with, and had either one (single means) or three (multiple means) movie rating sites to earn more points on. They then went on to answer questions about the task, under the cover story that it would help us further improve the movie rating program. Of key interest to us was the question that assessed their perceived difficulty of goal attainment ("How difficult does it seem to you to reach 300 points for the premiere tickets?") on an 11-point scale (1 = *Very easy*, 11 = *Very difficult*). We embedded this question among filler items that gauged participants' perceived complexity of the task ("How complicated does it seem to you to reach 300 points for the premiere tickets?" 1 = *Not at all*, 11 = *Very complicated*), satisfaction with current progress ("How satisfied are you with the progress you have made so far in the task?" 1 = *Not at all*, 11 = *Very satisfied*), as well as their current mood ("What mood are you in at the moment?" 1 = *Very bad mood*, 11 = *Very good mood*).

Results and Discussion

To examine how the number of means influenced people's perceived goal difficulty and how such impact was moderated by one's current stage in the pursuit, we conducted a 2 (stage of goal pursuit: initial vs. advanced) $\times$ 2 (number of means: single vs. multiple) factorial ANOVA on perceived goal difficulty. The analysis first showed a main effect of stage of the pursuit, such that those who were not given any points to start with believed that the goal was more difficult ($M = 5.58$, $SD = 2.21$) than those who were offered 200 points ($M = 3.41$, $SD = 2.65$), $F(1, 129) = 25.91$, $p < .01$. This main effect was qualified by a Stage of Goal Pursuit $\times$ Number of Means interaction, $F(1, 129) = 62.57$, $p < .01$. In support of our hypothesis, among the critics at the initial stages of goal pursuit, those who believed that they had three websites to earn points from perceived the goal to be easier to attain ($M = 4.93$, $SD = 2.14$) than those who had one website ($M = 6.13$, $SD = 2.15$), $t(57) = 2.14$, $p < .05$. In contrast, this pattern reversed among movie critics who have already received 200 points: Those who believed that they had a single website to earn points on perceived the goal to be easier to attain ($M = 2.62$, $SD = 2.31$) than those who had three websites ($M = 4.19$, $SD = 2.77$), $t(72) = -2.64$, $p < .05$. This important pattern shows that having multiple attainment means does not necessarily make a goal seem more easily attainable; instead, it may make it seem more difficult as people move closer to the attainment.

We also performed 2 (stage of goal pursuit: initial vs. advanced) $\times$ 2 (number of means: single vs. multiple) factorial ANOVA analyses on the other items in the survey to ensure that our manipulations did not introduce potential alternative explanations. The analyses showed that there was no significant difference in participants' perceived complexity of the task, $F(1, 129) = 0.20$, *ns*, or their mood levels, $F(1, 129) = 0.00$, *ns*. Interestingly, while there was a main effect of stage of the pursuit in participants' satisfaction level with their current progress, $F(1, 129) = 9.87$, $p < .01$, the Stage of Goal Pursuit $\times$ Number of Means interaction was not significant. That is, while critics at the advanced stages of pursuit were more satisfied with their progress than those at the initial

stages ($M_{advanced} = 6.99$, $SD_{advanced} = 1.55$ vs. $M_{initial} = 5.63$, $SD_{initial} = 1.58$), their progress satisfaction level did not differ based on the number of means they had in pursuing the goal; hence, progress satisfaction was unable to account for the observed variance in motivation. This pattern of results, combined with the findings in Study 3 (in which we directly manipulated the point at which people became certain about their goal's attainability), suggests that it is the certainty about goal attainment, rather than these alternative variables, that drives people's interpretation of the presence of multiple means.

While this study provides important process-level support for our hypothesis, our final study aims to connect all the factors together and examine whether it is indeed the case that once goal attainment becomes relatively certain, the presence of multiple means conversely makes a goal seem less easily attainable, and whether or not this perceived difficulty drives people's subsequent motivation.

Study 5: Memorizing Word Lists

In Study 5, we provided participants either one or three different ways to earn points at different stages of a word-memorizing task and measured their inference on the difficulty of goal attainment and their motivation in the pursuit. By measuring all these factors in one study, we were able to directly examine the relationship among the number of means, the perceived goal difficulty, and people's motivation. In addition, in this study we let participants who actually invested effort and accumulated progress to reach the advanced stage of pursuit, as well as manipulated the actual number of means (instead of perceived number of means), to mimic real-life goal pursuit situations and to further enhance the generalizability of our results.

Method

Participants. A total of 173 undergraduates at the University of Texas at Austin participated in this study for partial course credit.

Procedure. This study used a 2 (stage of goal pursuit: initial vs. advanced) $\times$ 2 (number of means: single vs. multiple) between-subjects design. Students participated in this study under the cover story of measuring college students' memory abilities. The cover story told participants that their task was to remember several lists of words. They could spend as much time as they would like on each list, and then they would be asked to do a free recall of words in the list. Points would be awarded for correct answers, and those who reached 900 total points would receive a prize of $10 cash.

After the introduction, participants commenced to the task. We displayed a dynamic progress bar with the end point of 900 on the screen to provide real-time feedback on participants' point accumulation. Half of the participants, in the initial stage conditions, encountered a biology-word section right after they commenced to the task. The other half of participants, in the advanced stage conditions, encountered the biology-word section after they have completed eight lists and earned roughly 800 points. At the beginning of the biology-word section, we manipulated the number of available means: Participants in single-means conditions were told that this upcoming section contained a list of biology-related

words and they would need to remember these words to earn up to 100 points. By comparison, participants in multiple-means conditions were told that there would be three different lists of biology-related words in this section and they would need to choose one and remember it to earn up to 100 points. That is, those in the single-means conditions proceeded with the task under the impression that there was only one way to earn more points—completing the next list, while those in the multiple-means conditions believed that there were three lists (i.e., three ways) from which they could choose one to make progress toward the goal.

After participants read the information, and before they actually began this biology section (or saw the options for the lists of biology-related words), they were given a "practice trial" of biology-related words. Specifically, participants were told that based on past results, the practice trial would help them perform better in the upcoming section and the more effort they put into the practice trial, the better they would be in remembering the upcoming list because many biology words had similar prefixes and suffixes; therefore, we expect that the participants who were motivated to earn more points would spend more time practicing before they moved on (Baumeister, Bratslavsky, Murave, & Tice, 1998; Louro, Pieters, & Zeelenberg, 2007). We chose this design, rather than choosing to measure the effort in remembering the actual list, for two important reasons: First, we would like to assess participants' motivation before they made a choice, to avoid the possibility that the freedom of choice in the multiple-means conditions would impact their motivation. Secondly, this design allowed all participants to memorize the same list of words in the practice trial (instead of memorizing words of their choice in the multiple-means conditions), so that the time they spent on the list would not be influenced by the actual content they were trying to remember, and made the contrasts among conditions a more valid comparison.

Before participants started with the practice trial, we asked them to report their current feelings on the same 11-point scale, "How difficult does it seem to reach 900 points for the $10 cash reward?" (1 = *Very easy*, 11 = *Very difficult*). We again inserted this question among filler items that gauged participants' satisfaction with current progress ("How satisfied are you with the progress you have made so far in the task?" 1 = *Not at all*, 11 = *Very satisfied*), satisfaction with the control they had in the task ("How satisfied are you with the control you have in deciding how to reach 900 points?" 1 = *Not at all*, 11 = *Very satisfied*), and their mood state ("What mood are you in at the moment?" 1 = *Very bad mood*, 11 = *Very good mood*).

Participants then started the practice trial. We measured the time they spent memorizing the biology words in the practice trial as an indicator of their motivation. After the practice trial, participants continued with the task. All participants reached 900 points in the end, and participants were paid as promised.

Results and Discussion

Motivation. We first analyzed the time participants spent on memorizing the practice list; based on our hypothesis, this motivation measure would be influenced by the number of means in the pursuit, and the direction of the impact would depend on participants' current stage of goal pursuit. The 2 (stage of goal pursuit:

initial vs. advanced) × 2 (number of means: single vs. multiple) factorial ANOVA on the time participants spent on the task (in seconds) yielded the predicted Stage of Goal Pursuit × Number of Means interaction, $F(1, 169) = 11.02$, $p < .01$, and there were no main effects in this analysis. Contrast analyses revealed that, among people who just started to earn points, those who believed that they had three lists in the upcoming biology section spent more time practicing ($M = 117.36$ s, $SD = 78.01$ s) than those who believed that they had only one list ($M = 80.99$ s, $SD = 52.13$ s), $t(86) = -2.56$, $p = .01$. In contrast, among the people who have already earned 800 points, those who believed that they had only one way to earn more points spent more time practicing ($M = 143.17$ s, $SD = 121.77$ seconds) than those who had multiple ways to choose from ($M = 92.52$ s, $SD = 67.95$ s), $t(83) = 2.27$, $p < .05$ (see Figure 5).

Inferences about perceived difficulty. Following the procedures in Study 4, we examined how the number of means influenced people's perceived goal difficulty and how such impact was moderated by one's current stage in the pursuit by conducting a 2 (stage of goal pursuit: initial vs. advanced) × 2 (number of means: single vs. multiple) factorial ANOVA on perceived goal difficulty. The analysis first showed a main effect of stage of the pursuit, such that those who had 800 points believed that the goal was less difficult ($M = 3.32$, $SD = 2.11$) than those who just started to earn points ($M = 4.89$, $SD = 2.13$), $F(1, 169) = 25.88$, $p < .01$. This main effect was qualified by a Stage of Goal Pursuit × Number of Means interaction, $F(1, 169) = 42.13$, $p < .01$. Subsequent contrast analyses revealed that, among the participants at the initial stages of goal pursuit, those who believed that they had three lists to choose from perceived the goal to be easier to attain ($M = 3.89$, $SD = 1.70$) than those who had one list ($M = 5.93$, $SD = 2.05$), $t(86) = 5.10$, $p < .01$. In contrast, among those who have earned 800 points, the people who believed that they had one list perceived the goal to be easier to attain ($M = 2.56$, $SD = 1.84$) than those who were offered three different lists to choose from ($M = 4.30$, $SD = 2.04$), $t(83) = -4.11$, $p < .01$.

We also performed 2 (stage of goal pursuit: initial vs. advanced) × 2 (number of means: single vs. multiple) factorial ANOVA analyses on measures of the alternative mechanisms, to examine whether these variables were influenced by the number of means and the stage of goal pursuit. Consistent with the previous study, there was no significant difference in participants' perceived level
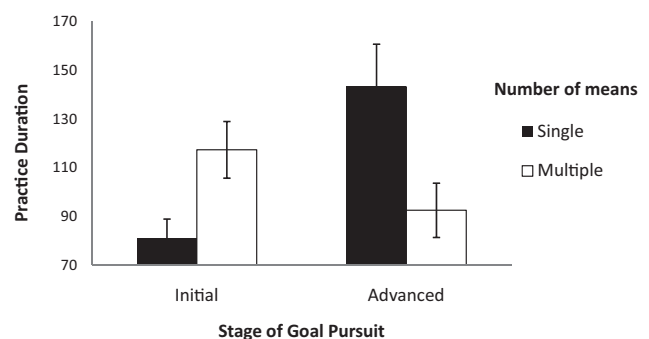

Figure 5. Practice duration as a function of stage of goal pursuit and number of means (Study 5). Error bars represent 1 standard error (*SE*) for the respective conditions.

of control, $F(1, 169) = 2.86$, *ns*, satisfaction with the control they had, $F(1, 169) = 2.03$, *ns*, or their mood levels, $F(1, 169) = 0.49$, *ns*. Also consistent with the findings in Study 4, while the stage of goal pursuit influenced participants' satisfaction level, $F(1, 169) = 18.71$, $p < .01$, such that the participants at the advanced stage of goal pursuit were more satisfied with their progress ($M = 7.94$, $SD = 2.08$) than those at the initial stage of pursuit ($M = 6.41$, $SD = 2.42$), this measure lacked the support from the important Stage of Goal Pursuit $\times$ Number of Means interaction, $F(1, 169) = .63$, *ns*, and therefore were unable to account for the variance in motivation.

From inferences to motivation. How, then, did participants' inferences on the difficulty of goal attainment influence their motivation? To address this question, we used a moderated mediation analysis to examine whether the relationship between the number of means (single vs. multiple) and one's motivation was mediated by the inference of goal difficulty, and whether this mediation was moderated by the current stage of goal pursuit.

We followed Preacher, Rucker, and Hayes (2007, Model 2) and used a bootstrapping procedure that generated a sample size of 5,000 to assess the regression models. The first part of this model regressed participants' inference of goal difficulty on stage of the pursuit, number of means, and their interaction term. The result showed a main effect of the stage of pursuit ($B = -.33$), $t(173) = -5.09$, $p < .01$, such that people at the advanced stages of the pursuit believed the goal to be less difficult than those at the initial stages; this main effect was qualified by the Stage of Goal Pursuit $\times$ Number of Means interaction ($B = 0.42$), $t(173) = 6.49$, $p < .01$, suggesting that whether the presence of multiple means led to the perception that the goal was less difficult depended on people's current stage in the pursuit. Specifically, the analysis of the indirect effect at each level of the moderator (initial stage vs. advanced stage) showed that when participants were at the initial stages of pursuit, multiple means made the goal seem less difficult ($B = -0.15$; $z = -2.86$, $p < .01$); this effect, however, was reversed when participants were at the advanced stages of pursuit ($B = 0.12$, $z = 2.73$, $p < .01$), such that having multiple means made the goal seem more difficult (see Figure 6). The second part of the model, which regressed participants' motivation on their perceived difficulty of goal attainment, stage of pursuit, number of means, and the interaction between stage of pursuit and number of means, yielded a dominant mediation of the perceived difficulty of goal attainment on motivation ($B = -0.32$), $t(173) = -3.79$, $p < .01$, suggesting that the effect of the number of means and stage of pursuit on people's motivation operated through influencing their perceived difficulty of goal attainment (see Figure 6).

Results from Study 5 support our proposed mechanism that the inference people make regarding the difficulty of goal attainment negatively affects their motivation, but such inference could be derived either from the presence of multiple means or from having only one means, depending on people's current stage in the pursuit.

General Discussion

Contrary to the popular belief that offering more options for people to pursue a goal always increases their motivation, we suggest that while it induces more effort investment at the initial stages of the pursuit, the presence of multiple means may in fact undermine people's motivation when they are at more advanced stages of goal pursuit. We attribute this change to the shift in people's primary concerns as they progress toward the end point of a goal and suggest that while the presence of multiple attainment means makes the goal seem more easily attainable initially, it complicates the pursuit and makes the attainment seem more difficult when people focus on how to reach the end point at the advanced stages of goal pursuit.

Results from five studies supported our hypothesis. In Study 1, we found in an actual coffee-shop loyalty program that while people who had zero stamps to start with (initial stage) showed greater motivation in the pursuit if they believed that there were multiple (vs. a single) ways to accumulate stamps, those who were promised six stamps to start with (advanced stage) were more motivated if they believed that there was only one (vs. multiple) way to further gain stamps. In Study 2, we tested the hypothesis in another field study by holding a blood donation drive and measured people's actual donation behaviors. We found that when the drive was at the initial stages, people were more likely to sign up to donate blood if they believed that there were three (vs. one) possible opportunities to donate; in contrast, when the progress on the donation goal was already high, people were more likely to contribute when they were told that there was only one (vs. multiple) opportunity to donate.
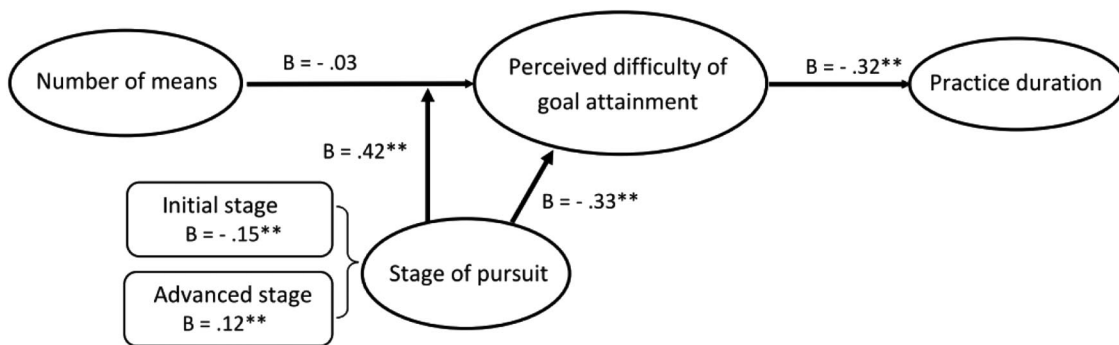

Figure 6. Moderated mediation model of perceived difficulty of goal attainment on practice duration (Study 5). $^{**}p < .01$.

The results of Study 3 and 4 provided important evidence on the underlying mechanisms by directly manipulating when people become relatively certain about the goal's attainability. In these two studies, we found that as long as people were questioning a goal's attainability, the presence of additional attainment means made the goal seem more easily attainable and induced greater motivation. In contrast, as long as people were relatively certain about the goal's attainability and shifted to focus on how to race to the end point of the pursuit, additional means had the opposite effect and dampened motivation. Finally, Study 5 provided mediational evidence on our proposed mechanism and demonstrated that it was indeed people's inferences on the difficulty of goal attainment, based on the number of means at their current stage of pursuit, that influenced their subsequent motivation.

Theoretical Implications

In the studies of motivation, while the majority of extant research has assumed that people's motivation would be under the influence of the same factors to the same extent throughout the goal pursuit, we suggest that it would be worthwhile to acknowledge the different variables that help initiate versus accomplish the pursuit of a goal. More specifically, our findings highlight the importance of understanding the inferences people make based on the number of available attainment means and the impact of such inferences on their subsequent motivation. Instead of assuming an invariably positive impact that additional attainment means may have on people's motivation, we suggest that this impact should depend on people's stages of goal pursuit and thus may not always work in the desirable direction.

While the present research focuses mainly on the two extremes of goal pursuit (the initiation versus completion of a goal), our findings have further implications for understanding the difference between initiating versus maintaining the pursuit of a goal. The initiation of a goal pursuit signals one's establishment of commitment and changes a person's behavioral pattern (from not pursuing a goal to pursuing a goal). By comparison, one's maintenance of goal pursuit signals the extension of this commitment and requires only the continuation of a person's existing behavioral pattern. On the basis of our current discussion, people infer goal difficulty at these two stages differently because they focus on different aspects of goal pursuit. It would therefore be possible that people might prefer the presence of multiple means when they are initiating a new goal because it reduces the uncertainty in the pursuit but would conversely prefer the simplicity of a proven means when maintaining a goal that they know how to accomplish.

Another interesting question is whether people switch fully to a deliberative mindset as soon as they initiate the actual pursuit of a goal (Gollwitzer, Heckhausen, & Steller, 1990; Taylor & Gollwitzer, 1995). In our studies, we found that the presence of multiple means not only enhances motivation when people are deliberating which goal to pursue, it also facilitates motivation in actual goal pursuit until people are relatively certain about the goal's attainability. One implication for this finding is that, in many occasions, the switch from a deliberative mindset to an implemental one may not occur immediately when people initiate the pursuit. Instead, the transition is a gradual process and a substantial portion of individuals' actual goal pursuit may involve a "joint" mindset that is characterized by a hybrid of both deliberative and implemental

cognitive tendencies. Future empirical research in this area would be a valuable addition to the existing literature of goal pursuit and motivation.

The Unintended Costs of Flexibility

One important implication of this research for practitioners is the potential negative impact of offering multiple means in inducing greater motivation. As we demonstrated, whenever people are concerned about how to complete a goal, flexibility actually made it more, rather than less, difficult. Organizations often operate under the assumption that by offering people greater flexibility in pursuing a goal, people will show greater motivation and are more likely to accomplish the goal. For example, loyalty program operators design programs that allow consumers to accumulate points for rewards through multiple ways, hoping to encourage more purchases. Similarly, public relations companies arrange events (e.g., a book signing tour) to take place at multiple locations during multiple time periods to generate higher attendance. Our findings raise the question of what actually constitutes an easier path. Specifically, our findings sound a cautionary bell to organizations by suggesting that while this practice may indeed be effective in eliciting greater motivation when the goal's attainability is in question, it may be counterproductive when the attainability is not a primary concern.

Our findings further add to the thriving literature that suggests that choices may not always be desirable (Iyengar & Lepper, 2000; Shafir et al., 1993; Shafir & Tversky, 1992). In the context of goal pursuit, we found that offering choices among available attainment means is productive when people are concerned about goal attainability, but it becomes counterproductive when people focus on reducing the discrepancy. On a more general level, we suggest a distinction between having the liberty of choice and the actual act of making a choice. The presence of choice options affords individuals the liberty of switching to a more efficient means when the going gets tough and offers additional assurance to goal attainment, but the actual exercising of this option may be disruptive and burdensome, particularly when people need to advance quickly. In this sense, the benefits of choice are best enjoyed when choice options are not exercised. This notion is consistent with the distinction between experiential and instrumental choices (Choi & Fishbach, 2011), which separates choices that one has to make from those one does not have to make. It was found that when people deliberate among options without any particular goal in mind, choices are more enjoyable and thus desired, which closely resembles our findings at the initial stage of goal pursuit—it is good to know that there are plenty of options to choose from in the pursuit but there is little urgency in making a decision.

In a similar vein, our results also suggest that restrictions in goal pursuit may be beneficial in motivation induction. Across all studies, we found that restrictions to the perceived flexibility in goal pursuit increased, rather than decreased, people's motivation when the goal attainability was relatively certain; by taking away options in goal pursuit, people became more motivated because the restrictions resulted in a more straightforward action plan to help them advance in the pursuit of the goal. Therefore, this research reflects the degree to which the number of available attainment means can motivate people and suggests that a less flexible goal structure (e.g., having fewer ways of goal attainment) may in some

cases be more motivating. It follows that the decision on whether and when to offer additional attainment means in goal pursuit should depend on the primary concern people have at that particular stage of pursuit and that the goal structure may need some adjustments as people progress toward the end point in order to maximize their motivation for eventual attainment.

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