

# How Endowed versus Earned Progress Affects Consumer Goal Commitment and Motivation

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Because consumers ask different questions to establish commitment at beginning versus advanced stages of goal pursuit, we propose that progress that they attribute to themselves and to the situation will have a distinctive impact on motivation, depending on their relative position in goal pursuit. When progress on achieving a goal is low, people are concerned about its attainability. Because attributing low progress to self (vs. to the situation) signals a higher difficulty of goal attainment, it leads to lower goal commitment and, subsequently, decreased motivation. Conversely, when progress on achieving the goal is high and attainment of the goal is relatively secured, people are more concerned about the value of the goal. Because attributing a high progress to self (vs. to the situation) signals a greater value of the goal, it should lead to greater goal commitment and, subsequently, higher motivation.

Individuals adjust their efforts in the pursuit of goals on the basis of their progress level on achieving this goal. For example, drivers are more likely to return to a car wash business when they feel that they have made some progress toward getting a free car wash in a loyalty program (Nunes and Drèze 2006), and a coffee drinker would go to a coffee shop more frequently if he feels that he is getting close to earning a free coffee on a reward card (Kivetz, Urminsky, and Zheng 2006). Although it is well established that the level of progress on attaining a goal has an impact on people's subsequent motivation, it is less clear whether the perceived source of progress would change its impact, and whether such influences would vary, depending on one's relative position in a pursuit. For example, we ask which types of stamps toward a free coffee on a loyalty card are more effective in promoting further purchases: stamps that customers earn by making purchases at the coffee shop or stamps that are given out to the customers for free in a promotion? Furthermore, do consumers interpret their progress differently if they have made significant progress toward achieving the goal or if they have only started the

pursuit? And, in turn, what impact will these interpretations have on their future behavior?

To address these questions, we adopt a goal framework (Ferguson and Bargh 2004; Förster, Liberman, and Higgins 2005; Gollwitzer and Moskowitz 1996; Kruglanski et al. 2002; Locke and Latham 2002) and propose that because consumers seek different information depending on the level of progress that they have made toward accomplishing a goal, progress that people attribute to the situation (i.e., endowed progress) and progress that people attribute to themselves (i.e., earned progress) would have different impacts on their subsequent motivation. Specifically, when progress on achieving a goal is low, people are primarily concerned about its attainability and infer the difficulty of attainment from their progress. Therefore, a consumer who attributed the low progress on a goal to themselves (vs. to the situation) would infer that the goal is difficult to attain and thus show lower motivation. Conversely, when people have made substantial progress and the attainment of the goal is relatively secured, they no longer question its attainability and instead focus on whether this goal is important and worth pursuing. In this case, individuals infer the value of the goal from their achieved progress. Those who attribute the high progress to themselves (vs. to the situation) would thus infer a higher goal value and would be more motivated to further pursue the goal.

The remainder of the present article is organized as follows. We review research that leads to our prediction that attributing one's progress to the situation may be more or less motivating than attributing the same progress to oneself, depending on the level of progress that the person has made in achieving a goal. This hypothesis was tested in four stud-

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ies that manipulated the level of progress that people had made (low vs. high) and whether they attributed the progress to the situation or to themselves. Then, we assessed individuals' subsequent motivation for further pursuing the goal. We conclude by addressing the implications of these findings for understanding consumer motivation and for improving future marketing practices.

### Motivational Consequences of Progress

The question of how consumers' motivation in goal pursuit may be influenced by their progress level on attaining the goal has received substantial attention in both marketing and social psychology literature. The overarching proposal in these findings is that motivational strength increases as one accumulates progress and approaches goal attainment (e.g., Brown 1948; Förster, Higgins, and Idson 1998; Lewin 1935; Liberman and Förster 2008; Miller and Murray 1952). In the context of marketing, Kivetz et al. (2006) revisited the goal gradient hypothesis (Hull 1932) using a consumer loyalty program and demonstrated that the perceived decrease in discrepancy between one's current position and the end point generated greater purchase frequency. Similarly, Nunes and Drèze (2006) found that endowed progress increases people's goal adherence and that the degree of adherence depends on the relative progress level on attaining the goal, rather than on the absolute progress that has been achieved.

By focusing on the level of progress, however, one assumes in these models that progress would have a similar impact on motivation, regardless of whether people perceive the progress to have been accumulated by themselves or to have been given to them by the situation (e.g., free stamps given as a promotion by a retailer). Specifically, in some cases, people may attribute the advancement toward a goal to themselves and interpret that the progress reflects their own active pursuit of the goal. We define this type of progress as *earned* progress. In other cases, however, progress can be gained from sources other than one's own active pursuit, and people may attribute it to the situation rather than to themselves. We define the latter type of progress as *endowed* progress. For example, consumers may accumulate frequent flyer miles by flying with a particular airline, or they can obtain the same miles when the airline runs a promotion and gives out free miles. Similarly, a returning customer may receive a loyalty card that already has two stamps on it from a merchant and can attribute the initial progress either to him- or herself and see it as a reward for past purchases or to the store that is running the promotion. The existing theories would predict that the initial stamps on this loyalty card will result in a similar increase in purchase frequencies, regardless of the attributions. Accordingly, when deciding whether to make a purchase, people should be concerned about only their relative position in the process and focus only on reducing the remaining discrepancy to the end point.

Recent research in the dynamics of goal pursuit (Fishbach and Dhar 2005; Zhang, Fishbach, and Dhar 2007) suggests

that, other than reducing the discrepancy between the current position and goal attainment, goal commitment provides an alternative source of motivation. In this literature, it is argued that people infer goal commitment from accomplished actions, and in turn they show greater motivation to further pursue the goal. For example, if people spend 2 hours on a treadmill in order to lose weight, they would interpret their effort in exercising as a commitment to this goal and would become more motivated to pursue more goal-directed actions.

Although it is established that greater goal commitment leads to higher motivation, it is unclear what determines one's commitment to a goal and whether the sources for commitment remain unchanged throughout the process of goal pursuit. In the present research, we explore two different sources of goal commitment. We propose that, because people move from seeking information on goal attainability to information on goal value in the establishment of goal commitment as they progress toward achieving the goal, earned progress and endowed progress will have different impacts on individuals' motivation, depending on the stage of goal pursuit.

### The Attainability of Goals

Commitment to a certain goal represents a person's decision to engage in the pursuit of this goal with the expectation of eventual attainment; thus, an initial question that individuals ask when establishing goal commitment is whether the goal is attainable. For example, both the value-expectancy models (e.g., Atkinson 1957; Tolman 1955; Vroom 1964) and goal-setting theory (Locke and Latham 1990) emphasize that individuals' decisions in adopting a certain goal at least partially depend on the cognitive assessment of their chances of attaining the goal. Therefore, a person's commitment to pursuing a goal should first depend on the extent to which he or she believes the goal is attainable. Whenever the answer to this question is uncertain, such as when consumers have only achieved low progress on attaining a particular goal, they should seek information to confirm the attainability of the goal before investing further effort.

For consumers who have only achieved low progress on a goal and question its attainability, the source of the existing progress allows them to make important inferences about whether they can eventually reach the end point. Compared with consumers who attribute their low progress to the situation, those who attribute their low progress to themselves are likely to infer that goal attainment is relatively more difficult, because their initial pursuit has resulted in little progress. For instance, if a customer loyalty program requires 12 stamps to redeem for a free gift, those who would have to make four purchases in order to obtain the same level of progress as those who were given four free stamps to start with are likely to infer that the goal is more difficult to attain. Because people are more likely to disengage from a goal that they anticipate will be difficult to attain (Bandura 1997), we further expect that consumers who infer a higher difficulty should in turn become less committed and show

lower motivation. In the previous example, consumers who would have to make four purchases to collect four stamps should therefore be less motivated in the pursuit than those who were endowed with four stamps.

### The Value of Past Actions

The question of goal attainability, however, is unlikely to persist forever: an increase in progress level should raise the perceived certainty of goal attainment (Liberman and Förster 2008) and, in turn, reduce people's concern about this question. At this stage, we propose that people's focus would shift to the second source of goal commitment: the importance or value of the attainable goal. When the attainability of the goal is relatively certain, people focus on the reduction of discrepancy between their current position and final goal attainment (Koo and Fishbach 2008). Therefore, their commitment to the goal, and the subsequent motivation, should depend primarily on the extent to which they value the goal attainment.

Consistent with the notion that people learn about their underlying values and preferences by observing their own behaviors (e.g., Aronson 1997; Bem 1972; Cialdini, Trost, and Newsom 1995), people learn about the value of goals by interpreting their active pursuit of the goal as a signal of its value (Fishbach and Dhar 2005). For example, if a person engages in an initial goal-congruent behavior (e.g., exercising in the gym), this person should infer that these actions signal that he or she truly values the goal (e.g., being healthy) and in turn becomes more likely to engage in other goal-consistent actions (e.g., choosing a healthy option for dinner).

If people learn about the value and importance of a goal from watching themselves engage in goal-related activities, it follows that the progress that they attribute to themselves should be more diagnostic of the goal value than endowed progress, which does not reflect people's conscious pursuit of the goal and thus carries little information in terms of signaling goal value. Therefore, when asking about the value and importance of the goal, people should focus on earned progress and infer high goal value from their active pursuit of the goal. Accordingly, we expect that when progress on attaining a goal is high, the progress that consumers attribute to themselves should elicit higher goal commitment and greater motivation to further pursue the goal, compared with progress that they attribute to the situation.

To summarize, we propose two distinctive sources of goal commitment depending on the level of progress that one has made toward achieving the goal: goal attainability when progress is low and goal value when progress is high. Whereas endowed (vs. earned) progress signals higher perceived attainability of the goal and elicits greater motivation when the progress level is low, earned (vs. endowed) progress signals a higher value of the goal and elicits greater motivation when the progress level is high. We tested these hypotheses in four studies. In study 1, we tested the hypothesis in a field study in the context of a customer loyalty program to examine whether endowed and earned progress

can have different motivational consequences, depending on consumers' progress levels. In study 2, we recorded people's repeated visits to an online music store and analyzed the patterns of their visits after endowed and earned progress. In study 3, we tested our theory using a common everyday goal with measures of people's intensity of continued effort in exercising. Finally, in study 4, we tested our proposed mechanism and investigated whether it is indeed people's inferences at different stages of goal pursuit that influence their subsequent motivation.

## STUDY 1: PROGRESS IN LOYALTY PROGRAMS

In study 1, we tested whether the attribution of progress on a consumer loyalty program would have a different impact on people's subsequent motivation when the level of progress was varied. In this study, we operated an actual loyalty program and manipulated the level of progress that the consumer achieved as well as their attribution of progress to either themselves or to the situation; we also measured their subsequent purchase behaviors.

*Pretest.* A total of 131 undergraduate students from the University of Texas at Austin participated in the scenario-based pretest. This pretest used a 2 (progress level: low vs. high)  $\times$  2 (progress type: endowed vs. earned) between-subjects design. Participants read in a scenario that a sandwich shop on campus was running a loyal customer program and that it required 12 stamps (each regular-priced purchase gets a stamp) to redeem for a free sandwich. In the earned-progress condition, participants read that they had collected either 3 stamps (low progress) or 9 stamps (high progress) on the card by eating at the shop. In the endowed-progress condition, in contrast, participants read that the sandwich shop offered customers a card that already had either 3 stamps or 9 stamps on it as part of their promotion. Participants then read that the shop had recently moved to a location farther off campus and that it would take about 10 more minutes to walk there. Participants were asked to indicate how likely they would be to still go to the sandwich shop for lunch (7-point scale; 1 = I definitely will not, 7 = I definitely will). Our results indicated that participants' interest in returning to the same shop yielded a main effect of progress level,  $F(1, 127) = 6.36, p < .05$ , and the predicted progress level  $\times$  progress type interaction,  $F(1, 127) = 12.05, p < .01$ . For participants who had made low progress on redeeming the loyalty card, those who had collected the stamps by making purchases reported a lower interest in returning to the shop when it became inconvenient ( $M = 2.74$ ) than did those who had received the stamps for free ( $M = 3.75$ ),  $t(67) = -3.03, p < .01$ . In contrast, for participants who had already made high progress toward card redemption, those who had made progress through purchases showed a higher interest in going back to the shop ( $M = 4.32$ ) than did those who received the stamps for free ( $M = 3.50$ ),  $t(60) = 1.98, p = .05$ . This pattern of reported mo-

tivation supported our hypothesis. On the basis of this pretest, we then launched our main experiment to examine consumers' actual shopping behaviors.

**Main Study.** In this field study, real customers at a local sandwich shop were given a loyalty card that required either a small or large number of additional purchases for a free meal, and they were led to believe that they had received the initial progress on the card either because they had made past purchases at the shop or because the shop was running a general promotion. We measured their subsequent purchase frequency as an indicator of their motivation to complete the card for the free meal.

## Method

The participants of this field experiment were customers at a falafel sandwich shop that was located near the campus of the University of Texas at Austin. This study used a 2 (progress level: low vs. high)  $\times$  2 (progress type: endowed vs. earned) between-subjects design.

We partnered with this falafel sandwich shop and created four different versions of loyalty cards for this field experiment. Participants in this study were repeat customers to the store and included students, university staff, and faculty. According to the loyalty card, each purchase of a full-priced sandwich would earn a stamp, and nine stamps in total were required on the card to get a free sandwich. We handed out 148 cards in the third week of March and marked the expiration date of the program as the end of April, thus making sure that the attainability of the goal would be a valid concern.

We manipulated the level of progress by providing cards that already had stamps on them: in the low-progress condition, the cards that were distributed already had three stamps on them and required six additional purchases, whereas in the high-progress condition, the cards had six stamps on them and required only three additional purchases.

We manipulated the progress type by informing customers why they were getting the free stamps. Before handing out the cards, the shop assistant first told the customer that the store was running a loyalty program and then verbally asked the customer how often he or she had purchased lunch there during the last month. If customers said that they had made purchases at least once in the past month, they were offered the card. For those in the endowed-progress condition, both the shop assistant and the instruction on the loyalty card indicated that the free stamps were a general promotion and that all customers had received the cards with the stamps on them. In the earned-progress condition, the shop assistant verbally told these customers that, because of their purchase history, they qualified for a promotion for repeating customers that gave them either three (low progress) or six (high progress) free stamps on the loyalty card, depending on the condition. In all conditions, it was ensured that only returning customers were offered the loyalty cards (those who indicated that they had made purchases here in the past), and we gave out cards only to individual customers (vs. customers who came in as a group of more than one)

to avoid cross-condition comparisons among participants. On the day of issuance, the cashier stamped the date on the back of the card and then recorded each purchase date afterward.

## Results and Discussion

By the end of the program, we collected a total of 47 cards, yielding a total redemption rate of 31.7%. This ratio did not significantly differ across conditions.

Because our data set allowed us to analyze only the purchase behavior of people who eventually completed all necessary purchases and redeemed the card for the free meal, we first used discrete hazard rate regression (Kivetz et al. 2006; Nunes and Drèze 2006) to model the probability that a customer would redeem for the free sandwich (vs. not redeem before the deadline). This analysis would allow us to better capture the truncation effect and to take into account the people who did not redeem for the free sandwich in each condition. In conducting our analysis at the day level, we assumed that each day was a potential redemption occasion, and each row in the data set represented 1 day on which each customer with a card could have made the redemption. Out of the total of 148 cards we handed out, this data set yielded 6,721 rows of data.

The discrete hazard rate regression model first yielded a main effect of progress level,  $\chi^2(1, N = 6,721) = 10.45$ ,  $p < .01$ , and a main effect of progress type,  $\chi^2(1, N = 6,721) = 7.90$ ,  $p < .01$ . More importantly, the analysis yielded the predicted progress level  $\times$  progress type interaction,  $\chi^2(1, N = 6,721) = 10.52$ ,  $p < .01$ . We then ran two separate hazard rate regression models at each progress level and found that progress type (endowed vs. earned) indeed had a significant effect on the probability that a customer would redeem for the free sandwich at each progress level, as was predicted (low progress:  $\beta = .87$ ,  $\chi^2(1, N = 3,479) = 3.67$ ,  $p = .05$ ; high progress:  $\beta = -1.13$ ,  $\chi^2(1, N = 3,242) = 8.69$ ,  $p < .01$ ).

We then analyzed the number of days between the card issuance and the final purchase for those cards that were redeemed—that is, the total amount of time that people needed to complete the required purchases for the free meal. An ANOVA of this variable first yielded a main effect of progress,  $F(1, 43) = 34.44$ ,  $p < .01$ , indicating that people who had started with six stamps on the card took less time to complete the purchases than did those who had started with three stamps. This main effect was qualified by a progress level  $\times$  progress type interaction,  $F(1, 43) = 8.85$ ,  $p < .01$ . Consistent with our hypothesis, we found that, for customers who had started with three stamps, those who thought that the stamps were a general promotion took less time to complete all purchases ( $M = 29.26$  days) than did those who believed that the stamps reflected their past purchases ( $M = 36.80$  days),  $F(1, 23) = 6.82$ ,  $p < .05$ . Conversely, for customers who had started with six stamps on the card, those who thought the stamps were a general promotion needed more time ( $M = 22.62$  days) to complete all of the purchases than did those who believed that they

had earned the stamps ( $M = 16.50$  days),  $F(1, 20) = 9.61$ ,  $p < .01$  (see fig. 1).

An alternative measure of individuals' motivation in attaining the goal was to measure how soon they returned to the shop after receiving the card—that is, the acceleration of purchases (Uncles, Ehrenberg, and Hammond 1995). We coded the number of days between the card issuance and the first purchase afterward as another indicator of consumer's motivation. An ANOVA of this variable yielded a progress level  $\times$  progress type interaction,  $F(1, 43) = 8.84$ ,  $p < .05$ . Among the customers who had started with three stamps, those who thought that the stamps were a general promotion returned to the shop sooner ( $M = 6.27$  days) than did those who believed that they had earned the stamps with past purchases ( $M = 11.40$  days),  $F(1, 23) = 6.62$ ,  $p < .05$ . Conversely, for customers who had started with six stamps on the card, those who thought the stamps were a general promotion took marginally more days to return to the shop ( $M = 9.88$  days) than did those who believed that they had earned the initial stamps with their past purchases ( $M = 6.07$  days),  $F(1, 20) = 4.14$ ,  $p < .06$ . Interestingly, we found that customers who had started with three endowed stamps did not make their first repeat purchase significantly faster or slower than those who had been endowed with six stamps,  $F(1, 21) = 2.95$ , NS, suggesting that increases in endowed progress do not necessarily motivate more accelerated purchases.

The results from study 1 supported our hypothesis. By directing whether real consumers attributed progress on a loyalty card to themselves or to the situation, we were able to affect their subsequent purchase frequency at different stages of the loyalty program. We found that although attributing progress to themselves increases consumers' motivation when they are close to redemption, doing so at early stages of the program actually decreases their purchase motivation.

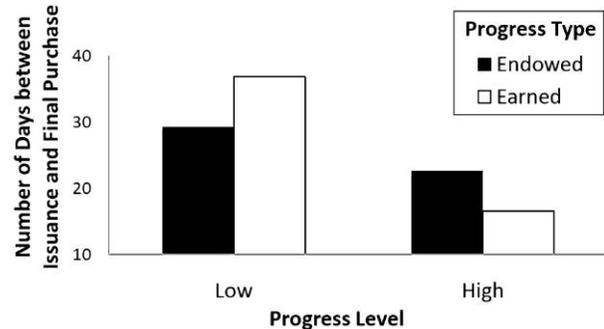
However, one important limitation in study 1 was that we were able to analyze only the repeated purchase patterns of those customers who successfully completed the necessary purchases and redeemed for the free sandwich. This design left out those who had completed the necessary purchases but failed to redeem the reward and those who had only partially completed the necessary purchases during the specified time period. This missing data could potentially account for the null effect in redemption rate across conditions and call for a study that can help us understand the full behavioral patterns of all of the people in the sample. We will address this question in study 2.

## STUDY 2: REPEATED VISITS TO A MUSIC STORE

In study 2, we created a music store and invited undergraduate students to be our "music raters." These music raters first built their profiles by providing their demographics and preference information; they were then led to believe that they had received either a small or large number of

FIGURE 1

TOTAL NUMBER OF DAYS AS A FUNCTION OF PROGRESS LEVEL AND PROGRESS TYPE (STUDY 1)



music-rating points, either because of their effort in building the profile or because of store's general giveaway to get them started. We measured how frequently these music raters logged back into the store's Web site to check for music postings as an indicator of their motivation to earn more points to win the music rater reward.

## Method

A total of 170 undergraduate students at the University of Texas at Austin agreed to be our music raters and to participate in this study. This study used a 2 (progress level: low vs. high)  $\times$  2 (progress type: endowed vs. earned) between-subjects design. All of the participants received the experimental materials in an experimental lab and completed the study during their leisure time outside the lab.

The cover story informed participants that an online music store needed to establish effective market segmentation and was thus inviting students to be "music raters." Specifically, as music raters, participants were given a personal identification number and a password, and they would need to log into the music store during a 3-day period (from Sunday midnight to Wednesday midnight) to listen to clips of music and provide their ratings for these samples. Participants were told that they could rate as many clips as they would like to and that they would earn a specified number of points for each clip that they rated, depending on the music. We informed them that music clips would be posted at a random interval, depending on when they became ready to be rated throughout the 3-day period, and that a clip would be taken down from the server once it had been rated by a certain number of raters. For each of the first 20 raters to reach 300 total points, we also offered a \$30 cash reward. Therefore, the more frequently a music rater checked the store's Web site for new postings, the sooner he or she could earn enough points to reach the goal of 300 points for the cash reward.

Participants were told that before they could log into the music store, we needed each of them to build a profile in the system so that we could match their opinions and preferences later on. Specifically, all of the participants com-

pleted a questionnaire that included demographic and general preference questions, and they rated a series of stimuli, including movie clips and sound samples, to build their own "music rater profile." Upon finishing, participants were told that they had successfully built a music rater profile. In addition to this information, participants were informed that they had received some rating points.

We manipulated the progress type and progress level by informing music raters how many points they had received and why they had received these points. For participants in the endowed-progress conditions, we told them that the music store had put either 40 points (low progress) or 180 points (high progress) into their account to get them started as a music rater; thus, they just needed another 260 (or 120) points to reach 300. For those in the earned-progress conditions, we told them that they had earned either 40 points (low progress) or 180 points (high progress) by answering the questions and rating the stimuli in building their profiles; thus, they just needed to gain another 260 (or 120) additional points to reach the necessary 300. Participants were then reminded that the actual music rating program would be put online the following Sunday night, and they left the experimental lab.

We e-mailed participants a reminder as well as their individual log-in information on Sunday before the program was put online. To control for potential variation of music-rating points that one could earn during the 3-day period, we did not actually post any music clips during this time period. Whenever participants logged in, they would see a processing bar and then a notification page saying, "There is no music sample available at this moment. Please come back to check the postings later." We recorded the date and time when each music rater logged back into the store, thus obtaining a frequency measure of their repeated visits, and we used this as an indicator of their motivation in earning more points. After the experiment was finished, all of the participants were debriefed via e-mail and compensated.

## Results and Discussion

Our main interest was the total number of times that the music raters logged into the music store to check for new music clips. Because the frequency of site visits was highly skewed, we first added .01 to all of the data points to remove problems with zeros and then log-transformed the frequency of site visits (e.g., Manchanda, Rossi, and Chintagunta 2004). Below, we report the analyses based on a log-transformed frequency measure, but for ease of interpretation, we report the actual number of visits when reporting means. A Poisson regression of participants' frequency of repeated visits first yielded a main effect of progress,  $\beta = .51$ ,  $\chi^2(1, N = 170) = 33.73$ ,  $p < .01$  and, more critically, the predicted progress level  $\times$  progress type interaction,  $\beta = .80$ ,  $\chi^2(1, N = 170) = 81.65$ ,  $p < .01$ .

Specifically, for music raters who started with 40 points, those who attributed the points to the store's general giveaway visited the store more often ( $M = 1.35$  times) than did those who attributed the points to their completion of

building the profile ( $M = 0.33$  times),  $\beta = -.71$ ,  $\chi^2(1, N = 86) = 22.78$ ,  $p < .01$ . Conversely, for music raters who started with 180 points, those who attributed the points to their own completion of profile building visited the test site more often ( $M = 4.50$  times) to accumulate more points than did those who believed that they had received the points as a general giveaway ( $M = 0.76$  times),  $\beta = .89$ ,  $\chi^2(1, N = 84) = 86.32$ ,  $p < .01$ . Further contrast analyses revealed that the music raters who started with 40 points and attributed them to general giveaway actually visited the store more often than did those who were endowed with 180 points,  $\beta = -.29$ ,  $\chi^2(1, N = 85) = 6.73$ ,  $p < .01$ , again suggesting that increased endowed progress may in fact decrease consumers' motivation. Those music raters who started with 40 points and attributed them to their efforts in completing the profile were less motivated than those who earned 180 points,  $\beta = 1.31$ ,  $\chi^2(1, N = 85) = 89.90$ ,  $p < .01$ . Similar patterns were found when we analyzed the frequency of visits on each day (see fig. 2).

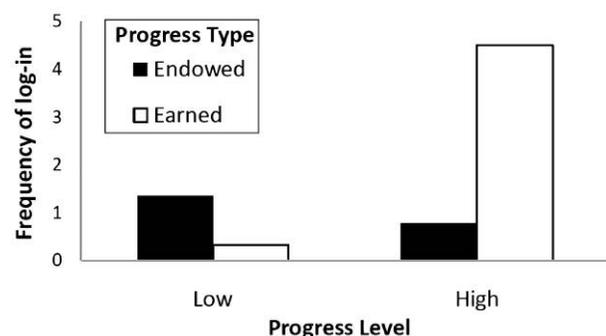
Study 2 provided further support for our hypothesis with a more complete data set. In this study, we found that, in a program in which music raters try to accumulate a certain number of points, when music raters attributed low progress to themselves, they were less motivated and visited the music store less frequently than those who attributed the low progress to the situation. However, when music raters were getting close to the total points required for the reward, those who attributed the high progress to themselves showed higher motivation than those who attributed the progress to the situation.

Importantly, because in this study participants only built a profile and did not perform any activities that were related to the actual task; that is, they never rated any music clips, it was impossible for them to infer the task difficulty on the basis of their effort and the points they received. This design allowed us to disentangle our manipulation of progress from perceived task difficulty and, in turn, ruled out the potential alternative explanation that inferred task difficulty might have played a role in our effects.

So far, we have shown that individuals' inferences based

FIGURE 2

FREQUENCY OF LOG-IN AS A FUNCTION OF PROGRESS LEVEL AND PROGRESS TYPE (STUDY 2)



on the attribution of their progress have different impacts on their motivation, and we have supported the hypothesis using both lab and field experiments with behavioral measures. In study 3, we intended to test our hypothesis using a more common consumer goal and to measure individuals' motivation using a different measure: the intensity of their continued effort.

### STUDY 3: INTENSITY IN EXERCISING

Participants in study 3 repeated a set of a "stepping routine" to burn calories. We provided them either high- or low-progress feedback on calories burned after a warm-up session, and participants were led to attribute the progress to their own exercising or to an external factor (i.e., high room temperature). We assessed participants' motivation to burn the desired amount of calories by measuring the frequency of stepping in the subsequent session.

#### Method

A total of 126 undergraduate students at the University of Texas at Austin participated in the experiment. The experiment used a 2 (progress level: low vs. high)  $\times$  2 (progress type: endowed vs. earned) between-subjects design. Participants were recruited through flyers posted around the school campus and were randomly assigned to the experimental conditions.

Participants completed the study individually in separate experiment rooms. In each experiment room, there was one computer station. We placed a square stepping pad 2 feet in front of the computer station and set up a camera at the corner of the room to record the entire experiment session. We also held the temperature in all rooms at 85 degrees Fahrenheit.

Participants were given the cover story that we were trying to understand more about how human body functions by testing the effectiveness of a new "stepping routine" in helping one to burn calories. Participants were told that it would be very important for them to follow the instructions carefully and to try to burn at least 300 calories, because only complete data would allow us to fully test the effectiveness of the exercise routine. Before commencing the task, participants were asked to enter their basic information (e.g., gender, height, weight, age, exercise frequency) on the computer in the experiment room. They were also asked to self-measure their pulse and to record the baseline pulse rate in the computer.

Participants then commenced the warm-up session and repeated some stepping movements to warm up their bodies. They were asked to follow the instructions that were displayed on the large monitor and to quickly step on different squares on the stepping pad in simple sequences. All of the participants were instructed to follow the rhythm and to repeat the stepping movements 50 times. After the intensive warm-up session, they were asked to return to the computer station to measure and record their pulse rates again.

After inputting their pulse rates, participants were asked

to wait while the computer processed the information they had entered. After displaying a "Calculating . . ." page, the computer provided feedback to participants based on their conditions: in the earned-progress conditions, participants were told that they had finished the warm-up session and that, based on their personal data (gender, weight, etc.) and the changes in their pulse rates, they had burned either 40 (low progress) or 180 (high progress) calories in the warm-up session. The feedback further explained that the exercise program would count the calories they had already burned toward the calculation of the total calories they needed to burn for the entire session, and it emphasized that they needed just another 260 (low progress) or 120 (high progress) calories in the main session of the stepping routine to reach the goal of burning 300 calories. In the endowed-progress conditions, the feedback also congratulated participants for completing the warm-up session. The instruction told participants that, in order to fully test the stepping routine under all conditions, they were about to test the program in a "hot" condition, with the room temperature set at 85 degrees Fahrenheit to increase blood circulation and help burn more calories. It further informed participants that the increase in blood circulation from the high room temperature would be equivalent to burning 40 (low progress) or 180 (high progress) more calories in the experiment session, which meant that they would need to burn just 260 (low progress) or 120 (high progress) calories in the main session to reach the goal of burning 300 calories. It is important to note that the room temperature was the same across all conditions; therefore, the feedback merely altered participants' attribution of the progress toward the final goal—either to their own exercising or to the experimental conditions.

After receiving the feedback, participants in all of the conditions returned to the stepping pad and started the main experiment session. The monitor demonstrated a set of stepping patterns that was entirely different from the warm-up session and participants were asked to follow and repeat the steps. There was also no rhythm in this session, and participants were told that they would need to repeat the stepping patterns and that the faster they could repeat, the more calories they would burn. Participants then started exercising and were stopped by the on-screen instruction after 3 minutes. Participants then measured and recorded their pulse rates one last time before exiting the room for a full debrief at the checkout desk.

#### Results and Discussion

Our main interest was participants' motivation for burning more calories in the main session, and we assessed this by measuring the intensity of their stepping (i.e., the total number of steps during the specified time period). An ANOVA of this intensity measure yielded the hypothesized progress level  $\times$  progress type interaction,  $F(1, 122) = 12.70, p < .01$ . There were no main effects in this analysis. For the participants with a low level of progress, those who attributed the progress to the experimental conditions repeated the stepping routine faster ( $M = 420.19$  steps) than did

those who attributed the same level of progress to their own effort ( $M = 364.22$  steps),  $F(1, 62) = 8.46$ ,  $p < .01$ . Conversely, for participants with high progress on the goal, those who attributed the progress to themselves repeated the stepping routine faster ( $M = 401.61$  steps) than did those who attributed the progress to the experimental conditions ( $M = 357.68$  steps),  $F(1, 60) = 4.64$ ,  $p < .05$ . Consistent with earlier studies, we also found that participants who attributed low (vs. high) progress to room temperature exercised more intensely,  $F(1, 61) = 9.29$ ,  $p < .01$ , whereas participants who attributed low (vs. high) progress to their own activities in the warm-up session exercised less intensely,  $F(1, 61) = 3.83$ ,  $p = .05$  (see fig. 3).

This experiment further demonstrated that although attributing low progress to the situation (vs. to self) increases one's motivation in the goal pursuit, attributing high progress to the situation (vs. to self) decreases the motivation. Interestingly, we found that more endowed progress in this experiment even decreased people's exercising intensity, suggesting that higher endowed progress, rather than increasing people's motivation in the goal pursuit, may in fact decrease their motivation.

Having demonstrated the impact of progress attribution at different stages of goal pursuit, in study 4 we hoped to provide more direct evidence of our proposed mechanism in a more controlled environment. We aimed to show that people are concerned about different questions at different stages of goal pursuit and that the inferences they make determine their subsequent motivation, by directly measuring participants' concerns about the attainability and importance of the goal before assessing their motivation.

#### STUDY 4: WAIT TIME WITH BACKGROUND NOISE

Participants in study 4 completed a word recognition task on computers and were made to listen to an annoying noise when waiting for one of the questions, either toward the beginning or approaching the end of the task. We further manipulated the attribution of the progress by convincing participants that the accumulated progress was either the result of their work or was given to them for free by the computer program. We then measured the participants' persistence on waiting for the bonus question as an indicator of their motivation in completing the task.

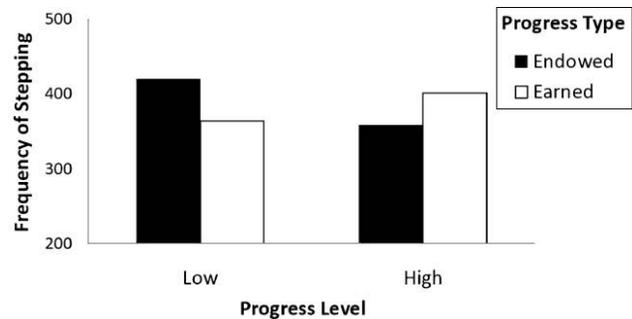
#### Method

A total of 90 undergraduate students at the University of Texas at Austin participated in the study on desktop computers in exchange for cash compensation. The study used a 2 (progress level: low vs. high)  $\times$  2 (progress type: endowed vs. earned) between-subjects design.

Upon arriving at the lab, participants were told by the experimenter that we were interested in people's strategies in using sensory systems—namely, how people identify visual and audio stimuli. The experimenter explained that the task involved two types of questions: visual and audio. For

FIGURE 3

FREQUENCY OF STEPPING AS A FUNCTION OF PROGRESS LEVEL AND PROGRESS TYPE (STUDY 3)



the visual question, they would see some ambiguous characters on the screen, and their task was to correctly identify them and type them out; for the audio questions, they would hear some short clips, and they would identify what sound each was. Participants were further told that there were nine questions in total and that they would receive another \$3 bonus on top of their compensation if they could answer all nine questions correctly.

The task was structured in a way that participants completed either three (low progress) or six (high progress) visual questions before a pop-up window appeared, asking them to put on headphones for the audio question. Once they put on the headphones, they were informed that, because there was a limit on the number of computers that could simultaneously access this particular sound file, they should wait for the question with their headphones on. They were also told that music would be played during their waiting time to get them ready for the sound question and that they could not remove the headset. Instead, if they preferred not to wait, they could click "Continue" at any time to skip the current question and to move on to the next question that would require no wait. We created the "music" played in the headphones by mixing up high-pitched noises and excerpts of classical music, and made the clip repeat itself every 3 seconds, resulting in a clip of extreme random noises. We then measured the time that participants spent waiting while listening to this annoying noise clip as an indicator of how motivated they were to complete all nine questions for the bonus.

The level of progress was manipulated by the sequence of the questions. For participants in low-progress conditions, this sound question appeared as the fourth question in the sequence; for those in high-progress conditions, it appeared as the seventh question. Therefore, participants had completed either one-third of the task (low progress) or two-thirds of the task (high progress) before encountering the noise. The type of progress was manipulated by whether the progress that people had achieved prior to encountering the noise was attributed to their own work or was perceived to be a bonus from the computer. In the earned-progress conditions, participants commenced the task and completed ei-

ther three or six questions before they encountered the audio question that required them to wait. In the endowed-progress conditions, participants were first asked to complete a few trial practices, and they answered the same three or six questions as other conditions, under the impression that these were trials. When they clicked to commence the main task, a pop-up window showed up and informed the participants that, in order to test the program, they had been randomly selected to start the test from the fourth question (low-progress condition) or the seventh question (high-progress condition) in the task. The instruction further explained that the skipped questions would be counted as correct answers for them. After these instructions, they received the endowed progress on the progress bar and started the main task. This procedure ensured that participants in both earned-and endowed-progress conditions completed the same number of questions before facing the noise, and their objective distance to goal attainment was equal, regardless of whether they attributed it to themselves, or to the situation.

The main objective of study 4 was to examine participants' inferences during the task. Therefore, we informed participants at the beginning of the experiment sessions that, in order to get some feedback on the setup of the experiments, there would be questions related to the design rather than to the content of the experiment popping up at various stages of the task. Participants were told that these questions would ask them about their feelings about the experiments, and they were assured that their answers would remain anonymous and would not influence their compensation in any way. A few examples, such as, "How much do you like the background color of this survey?" then popped up to get participants familiarized with this type of question. Our main interest was participants' perceived attainability and importance of the goal; therefore, we arranged the questions to show up right after the explanation of the sound question—that is, right after participants were asked to put on their headphones to wait for the audio question (but before the actual start of the noise). There were two questions in this pop-up box: "How likely are you able to correctly answer all questions and get the bonus?" and "How important is it for you to complete all questions and get the bonus?" Both questions were answered on 7-point scales (1 = not at all, 7 = very much). After answering these questions, participants closed the pop-up window and continued with the main experiment.

We capped the noise at 6 minutes, and none of the participants waited until the end; therefore, none of them answered all of the questions correctly. After completing the experiment, we debriefed participants on the procedure and paid all of them the bonus, in addition to the promised compensation.

### Results and Discussion

An ANOVA of the amount of time that participants waited for the audio question while listening to the noise yielded the predicted progress level × progress type interaction,  $F(1, 86) = 8.90, p < .01$ . There were no main effects in

this analysis. Subsequent contrast analyses revealed that, among the participants whose progress in completing all nine questions was low, those who believed that they had received the progress for free waited longer with the background noise ( $M = 233.27$  seconds) than did those who attributed the same progress to themselves and believed that they had worked to earn it ( $M = 190.35$  seconds),  $F(1, 43) = 4.75, p < .05$ . In contrast, among participants whose progress in completing all nine questions was high, those who believed that they had received progress for free waited less ( $M = 200.22$  seconds) than did those who believed that they had earned it ( $M = 233.86$  seconds),  $F(1, 43) = 4.17, p < .05$ . Interestingly, we again found that the participants who attributed low progress to the situation actually waited marginally longer than those who attributed high progress to the situation,  $F(1, 44) = 3.00, p < .10$ , showing that additional endowed progress does not necessarily increase people's motivation in the pursuit (see fig. 4).

Participants' answers to the two questions on perceived attainability and importance of the goal allowed us to further examine the underlying process of the observed pattern in motivation. An ANOVA of participants' perceived attainability of the goal ("How likely are you able to correctly answer all questions and get the bonus?") first showed a main effect of progress level,  $F(1, 86) = 10.33, p = .01$ , suggesting that the participants in high-progress conditions perceived that they were more likely to attain the goal ( $M = 5.73$ ), as compared with those in the low-progress conditions ( $M = 4.87$ ). This main effect was qualified by a progress level × progress type interaction,  $F(1, 86) = 6.68, p = .01$ . Specifically, for participants with only low progress on the goal, those who believed that they had received the progress for free perceived that they were more likely to attain the goal ( $M = 5.46$ ), as compared with those who attributed their low progress to themselves and believed that they had earned the progress ( $M = 4.19$ ),  $t(43) = 3.01, p < .01$ . However, when progress on the goal was high, the perceived attainability of the goal did not differ between participants who thought that they had earned the progress ( $M = 5.83$ ) or had received the progress for free ( $M = 5.64$ ),  $t(43) = -.50, NS$ .

FIGURE 4

PERSISTENCE ON WAITING AS A FUNCTION OF PROGRESS LEVEL AND PROGRESS TYPE (STUDY 4)

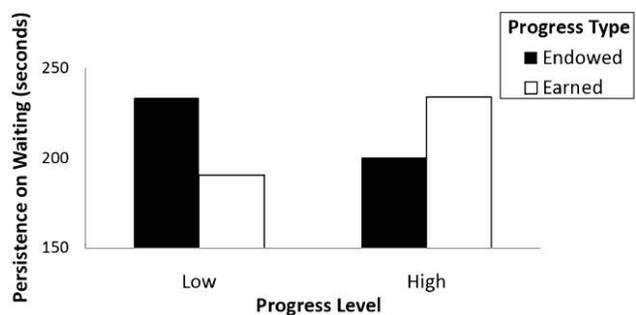
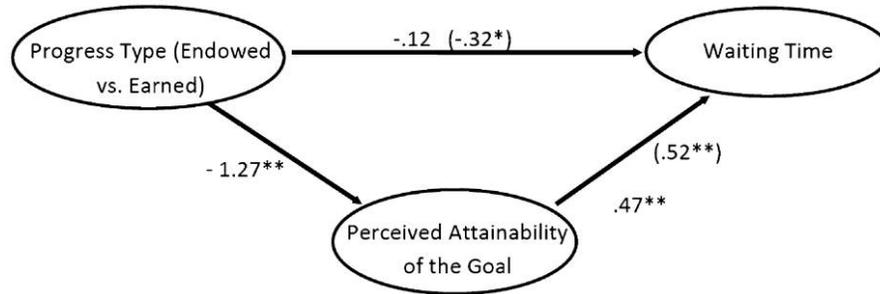


FIGURE 5

PATH MODEL OF THE INFLUENCE OF PERCEIVED ATTAINABILITY OF THE GOAL ON WAITING TIME AMONG LOW-PROGRESS PARTICIPANTS (STUDY 4)



Similarly, an ANOVA of participants' perceived importance of the goal yielded a goal progress  $\times$  progress type interaction,  $F(1, 86) = 6.83, p = .01$ . Among participants whose progress on the task was low, the perceived importance of the goal was not different between those who thought that they had earned the progress ( $M = 5.86$ ) and those who were endowed the progress ( $M = 6.29$ ),  $t(43) = -1.19$ , NS. However, among those who had achieved high progress on the task, participants who attributed the progress to themselves and thought that they had earned it perceived the goal to be more important ( $M = 6.35$ ) than did those who thought that they were just endowed with the same level of progress ( $M = 5.50$ ),  $t(43) = -2.57, p < .05$ . No main effect was found in this analysis.

We further regressed the amount of time that participants waited for the audio question on both their perceived attainability and the importance of the goal at two different levels of goal progress. When participants' progress on the goal was low, the perceived likelihood to attain the goal positively predicted the amount of time that participants waited for the question,  $\beta = .54, t(42) = 4.19, p < .01$ , whereas the perceived importance of the goal was nonsignificant,  $\beta = .19$ , NS. However, when participants' progress on the goal was high, their perceived importance of the goal positively predicted their waiting time,  $\beta = .45, t(42) = 3.19, p < .01$ , whereas the perceived likelihood of attaining the goal was nonsignificant,  $\beta = .09$ , NS.

We were also interested in testing whether the impact from the two mediators (goal attainability and goal value) changes when one's progress level increases. Therefore, we regressed participants' waiting time on their progress level, goal attainability, goal value, and all four interactions terms as predictors. The analysis revealed a main effect of goal attainability,  $F(1, 82) = 10.52, p < .01$ , a main effect of goal value,  $F(1, 82) = 4.14, p < .05$ , and a significant progress level  $\times$  goal attainability interaction,  $F(1, 82) = 6.29, p = .01$ , suggesting that the impact of goal attainability differed at the initial versus advanced stages of goal pursuit. Combining this analysis with our earlier results that goal attainability (but not goal value) predicted people's motivation when progress was low, and that goal value (but not goal

attainability) predicted motivation when progress was high, we are able to conclude that the reversal of impact from these two mediators on motivation was mainly driven by the decrease of impact from goal attainability when one progresses toward the end point. This resulted in the dominance of goal value in determining one's motivation when a person approaches the end point.

To further test the relation between participants' motivation and the inferences they made about the attainability or value of the goal at different stages of goal pursuit, we conducted two mediation analyses. The first mediation analysis was on participants who had made low progress toward attaining the goal: directly, progress type (endowed vs. earned) negatively predicted the amount of time that participants persisted in waiting for the question under annoying noise,  $\beta = -.32, t(43) = -2.18, p < .05$ ; indirectly, progress type negatively predicted the perceived attainability of the goal,  $\beta = -1.27, t(43) = -3.01, p < .01$ , and the perceived attainability positively predicted the amount of time that they persisted in waiting,  $\beta = .52, t(43) = 4.00, p < .01$ . When controlling for perceived attainability of the goal, the path between progress type and the time persisted in waiting became nonsignificant,  $\beta = -.12, t(42) = -.83$ , NS, whereas the perceived attainability of the goal remained a significant predictor,  $\beta = .47, t(42) = 3.28, p < .01$  (see fig. 5).

The second mediation analysis was conducted on the participants who had achieved high progress on the goal: directly, progress type (endowed vs. earned) positively predicted the amount of time that they persisted in waiting for the question under noise,  $\beta = .30, t(43) = 2.04, p < .05$ ; indirectly, progress type positively predicted the perceived importance of the goal,  $\beta = .37, t(43) = 2.57, p < .05$ , and the importance of the goal in turn positively predicted the amount of time that participants persisted,  $\beta = .43, t(43) = 3.16, p < .01$ . When controlling for the importance of the goal, the path between progress type and the total persisted time became nonsignificant,  $\beta = .16, t(42) = 1.09$ , NS, whereas the importance of the goal remained significant,  $\beta = .38, t(42) = 2.55, p < .05$ . This result provided further support for our hypothesis that people make different in-

ferences on the basis of progress as they move along the path toward the end point, and such inferences, in turn, have an impact on their motivation in subsequent goal pursuit (see fig. 6).

### GENERAL DISCUSSION

In the pursuit of a goal with a specific end point, people monitor their progress and focus on different questions to establish their commitment to the goal, depending on the remaining distance to the end point: while they are more concerned about the attainability of the goal at the early stages of goal pursuit, they shift their focus to confirming the value of the goal once they move further along the pursuit and are relatively certain about the attainability of the goal.

In the present research, we distinguished between two types of progress on a goal—endowed progress and earned progress—that allow people to make different inferences in the establishment of goal commitment. Specifically, we demonstrated that when progress on a goal is low and people focus on the attainability, endowed (vs. earned) progress suggests higher goal attainability and, in turn, increases one’s goal commitment and motivation. On the other hand, when higher progress on attaining the goal reduces consumers’ concern about goal attainability and people focus on goal value to establish goal commitment, earned (vs. endowed) progress should lead to higher motivation because it signals greater goal value.

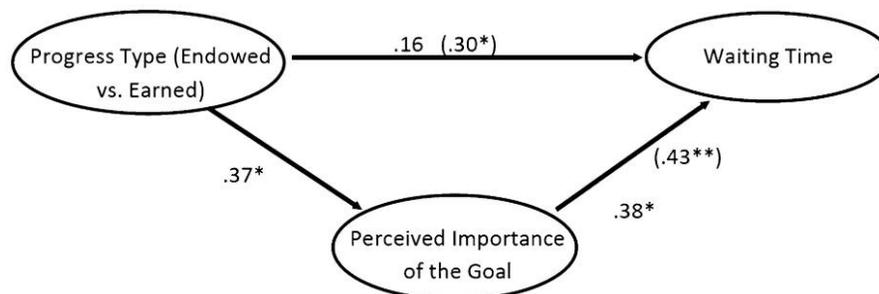
Results across four studies supported our theorizing. Study 1 used an actual customer loyalty program and found that while believing that low progress in the program was endowed (vs. earned) motivated more frequent purchases, believing high progress in the same program as endowed (vs. earned) resulted in less frequent purchases. Study 2 found the same pattern by observing people’s repeated visits to an online music store after receiving either a small or large number of points toward an award redemption. In study 3, we tested the hypothesis with a calorie-burning goal and found that attributing low progress in this goal to external conditions (vs. to self) led to higher intensity in sub-

sequent exercising, but attributing high progress in the same goal to external conditions (vs. to self) resulted in less intensity in later sessions. Finally, study 4 provided direct evidence on the inferences people made and found that people inferred lower goal attainability based on earned (vs. endowed) progress when the progress level was low but inferred higher goal value based on earned (vs. endowed) progress when the progress level was high. These inferences, in turn, affected their subsequent motivation.

Key to our theorizing in this proposed model are the different inferences that people make at different stages of goal pursuit, and evidence from our studies supported this hypothesis. In particular, we found (in study 4) that when progress was low, people inferred that the goal was more attainable if they attributed the low progress to the situation rather than to themselves, and they were thus more likely to adhere to the goal. Importantly, at this stage, their perceived value of the goal did not differ, even though progress was attributed to different sources. This suggests that when progress was low, people were not interpreting it as a signal of goal value; they focused only on the attainability of the goal, which determined their subsequent motivation. When the progress level increased and the end point was within reasonable proximity, however, we found that people no longer differed in their perceived attainability but, instead, showed a difference in the value that they attached to the goal, depending on whether they attributed the progress to themselves or to the situation. These differences in value, in turn, determined their subsequent adherence to the goal. This shift suggests that when one approaches the end point of a pursuit, the concern over attainability reduces, and people focus instead on whether this goal is important or valuable to them, highlighting the two distinctive sources of commitment.

This shift in people’s concerns advances our understanding of the existing expectancy-value models (e.g., Feather 1982; Shah and Higgins 1997; Vroom 1964) by adding a temporal dimension to the theorizing. Classic theories in motivation have long suggested that one’s motivation is jointly determined by the expectancy of reaching a goal and the goal’s value, and an increase in either component should

FIGURE 6  
PATH MODEL OF THE INFLUENCE OF PERCEIVED IMPORTANCE OF THE GOAL ON WAITING TIME AMONG HIGH-PROGRESS PARTICIPANTS (STUDY 4)



lead to a corresponding increase in motivation (for a review, see Feather 1982; Mitchell 1982). This relation has been supported by findings in various theories, including the expected utility theory (e.g., Edwards 1954), achievement motivation (e.g., Atkinson 1957), and the theory of reasoned action (Fishbein and Ajzen 1974). Whereas extant models treat the two components with equal emphasis at all stages of goal pursuit, our findings suggest that people's primary concerns shift from attainability to value as they progress along the pursuit. In particular, we found that they make inferences on the basis of whether they have invested effort in making progress to answer these questions and that they adjust their subsequent motivation accordingly. For example, whereas the extant models predict that an increase in goal value would have the same impact on motivation when the increase occurs at any stage of goal pursuit, we suggest that the same increase in goal value will have a more significant influence when it occurs after individuals have made substantial progress on a goal and are less concerned about its attainability.

Note that in our proposed model we focus on goals with a specific end point (i.e., discrete goals) and suggest that because people's primary concern shifts from goal attainability to value, the attribution of goal progress may have an impact on people's commitment throughout the course of the pursuit. By comparison, for continuous goals with no specific end point, such as exercising to be fit, we suggest that the impact of the attribution may follow a different pattern: because there is no specific end point in these goals, goal attainability is less of a concern, and people infer goal value from the progress they make in pursuing the goal (see, e.g., Fishbach and Dhar 2005). Therefore, it is possible that the value of the goal may be well established with the accumulation of goal progress, and additional progress offers little diagnosticity in increasing goal value. As a result, the attribution of goal progress beyond a certain point should have little impact on people's motivation.

A related question concerning continuous goals is when people experience the value of the goal. For some goals, particularly those with specific end points (e.g., loyalty programs), goal value derives solely from the eventual attainment, and partial completion offers little or no value; therefore consumers need to focus only on the end point when asking about goal value. For many continuous goals (e.g., losing weight), however, the value of goals can be experienced in the process of engagement and even partial completion can be valuable. In this case, goal value depends not only on what people expect to accomplish in the future but also on what they have already accomplished in the past. Future research should try to extend the current research to continuous goals and examine how consumers establish goal commitment when they can partially experience the value of the goal as they progress along the pursuit.

Also, in our conceptualization, the level of progress represents the distance that one has covered in goal pursuit, and we suggest that it not only moves a person closer to goal attainment but also shifts consumers' primary concern

by reducing the uncertainty in goal attainment. Alternatively, goal progress could be conceptualized in relative terms. For example, the feedback-loop theories of self-regulation (e.g., Carver and Scheier 1998) suggest that people assess their progress by comparing it with satisfactory standards, and they adjust their effort accordingly. Although these models focus on the relative comparison between actual and expected progress, our present model focuses on the progress level in relation to the entire distance that one has to cover in attaining the goal. We believe that people engage in both assessments in the pursuit, and it would therefore be interesting in future research to analyze how the comparison between actual and expected progress may influence people's primary concern in goal pursuit and the motivational consequences.

### Implications for Other Self-Regulation Theories

Research in self-regulation emphasizes the reduction of discrepancy between one's current state and the desired end state in motivating goal-congruent behaviors (Carver and Scheier 1998; Gollwitzer 1999; Higgins 1987; Locke and Latham 1990). For example, the cybernetics models (Carver and Scheier 1998) found that the remaining distance to a desired end state motivates behavior toward the attainment of the end state. Similarly, research on loyalty programs in marketing context echoes these findings, indicating that initial progress toward the final redemption increases buyers' purchase frequency (Kivetz et al. 2006; Nunes and Drèze 2006). According to these models, people's relative position in a goal pursuit determines their motivation, and it is less important whether the existing progress involved personal effort or not.

Our present findings add to these other findings by showing that individuals' motivation depends not only on the relative position but also on the progress that they have already made (Koo and Fishbach 2008; Soman and Shi 2003). In particular, we distinguished between progress that people attribute to themselves and progress that they attribute to the situation, and we examined their respective motivational consequences at different stages of goal pursuit. Our findings suggest that, depending on whether people have just started to move along the path or have made sufficient progress on a goal, they rely on different sources for goal commitment and subsequent motivation, and their interpretation of earned versus endowed progress varies accordingly.

Our results further extend the research in the dynamics of self-regulation (Fishbach and Dhar 2005; Koo and Fishbach 2008). For example, Fishbach and Dhar (2005) suggested that people observe their own goal-congruent actions and make inferences about their commitment level to the goal, which further increases their motivation in the pursuit of this goal. The present findings extend the theorizing by demonstrating the perceived goal attainability as a second factor that establishes goal commitment and by examining when each of the factors should dominate. We suggest that, depending on the stage of goal pursuit, both the perceived attainability and the value of the goal can contribute to one's

commitment. The critical factor, as we document in the present research, is the level of progress that one has already made. Therefore, it is possible that, in some situations, even though individuals have made a substantial effort investment, the perceived attainability of the goal remains low (such as when the effort has resulted in little progress), and they conclude that advancing the goal is difficult. People may still experience low goal commitment and disengage from this goal accordingly.

### Practical Implications

One important implication from our findings for practitioners is the effectiveness of endowed progress in inducing greater motivation in goal pursuit. Endowed progress is common both in and outside the commercial world. For example, survey respondents may receive a questionnaire that already has a few questions answered for them as a demonstration, and they may perceive it as endowed progress toward completing the questionnaire. Similarly, marketers give away free points toward reward redemption, hoping that they will encourage more purchases from the customers. Conventional wisdom in these situations holds that endowed progress increases motivation in completing the goal, and the greater the endowed progress is, the more motivated people become. Our findings, however, suggest that instead of consistently increasing motivation, endowed progress may actually decrease one's motivation by lowering goal value. We found that whenever endowed progress puts people within reasonable proximity of goal attainment (e.g., six stamps on a reward program that requires nine) and confirms the attainability of the goal, people shift their focus from goal attainability to inferring the goal value on the basis of the "free progress" and adjust their motivation accordingly. Because endowed progress signals little goal value, it may in turn reduce (rather than increase) people's motivation to pursue it. On the basis of our results, we suggest that when determining the magnitude of endowed progress, such as promotions that give consumers free progress toward a goal, one should be cognizant of the possibility that excessive endowed progress may decrease people's motivation and should ensure that the amount of endowed progress is moderate so that it does not allow individuals to infer low goal value from such progress.

Finally, our findings also have specific relevance for marketers who are designing customer reward programs. Given the inferences that people make at different stages of goal pursuit in establishing goal commitment, we suggest that the programs should highlight the different signaling value of the progress to elicit greater motivation from customers. At the initial stage of a customer reward program, when people are more concerned about whether they can reach the end point, it is important to emphasize the attainability of the end point. Marketers can design the program so that consumers' initial efforts will result in substantial progress so that they can conclude that the goal is attainable, thus increasing their motivation. When people move toward the end point and the attainment of the goal is relatively secure,

marketers should adjust their communication and emphasize the value of the goal, possibly by highlighting the work that consumers have done to pursue the goal. By framing their consumers' own activities as a signal of goal commitment, marketers can communicate to them that their pursuit indicates that the goal is valuable and worth pursuing, and that they should increase their efforts to ensure its final attainment.

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