The “Small Area” Effect: How Progress Monitoring Influences Participation in a Reward Program

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This research proposes for an identical absolute level of goal progress, attending to the smaller of either the completed progress cue or the remaining progress cue is more motivating. This is because an additional action is seen as yielding greater progress when consumers compare it to a small (vs. large) number of actions.

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SPECIAL SESSION
“How Close or How Far?” The Role of Perceived Goal Progress in Consumer Goal Pursuit
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EXTENDED ABSTRACT

“How Stuck in the Middle: The Psychophysics of Goal Pursuit”
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Achieving a goal often requires engaging in goal-consistent actions for a prolonged period of time. For example, losing weight requires sticking to a diet and resisting temptation to indulge for many months. The classic goal-gradient hypothesis (Hull 1932; see also Kivetz, Urminsky and Zheng 2006; Nunes and Dreze 2006) posits that motivation to reach a goal increases monotonically with proximity to the desired end-state.

In this research, we posit that motivation to reach a goal is not always a monotonic function of distance from the desired end-state. Specifically, we show that motivation to reach a desired end-state is higher when either far from the goal or close to the goal, and lower when halfway toward reaching the goal. We propose a psychophysical explanation that accounts both for this tendency to get “stuck in the middle” and for the classic goal-gradient pattern. In particular, we argue that motivation to engage in goal-consistent behavior is influenced by the perceived marginal value of progress granted by a goal (Heath, Larrick and Wu 1999).

According to previous research, people monitor progress toward a goal in terms of distance from a standard of reference (Carver and Scheier 1998). Specifically, they can either use their initial state (i.e., their starting point) as the standard of reference, hence consider what they have achieved so far (e.g., to-date frame), or they can adopt the desired end-state as their standard of reference, hence consider what they still need to achieve (e.g., to-go frame), (Koo and Fishbach 2008). We suggest that people tend to adopt the initial state as the standard of reference when far from the goal and the final state as the standard of reference when close to the goal. Furthermore, consistent with the psychophysical power law (Stevens 2000), and the principle of diminishing sensitivity (Kahneman and Tversky 1979; Tversky and Kahneman 1991), we suggest that the value of the same unit of progress decreases as the distance from the standard of reference adopted increases. For example, if the goal is to collect 100,000 frequent flier miles, flying 4,000 miles seems a lot when the account shows 5,000 miles (the standard) or when the account shows 95,000 miles (the standard being 5,000 miles to go). The same 4,000 miles, however, seem little when the account shows 50,000 miles because either standard yields a ratio of 4,000 to 50,000. Thus, “in the middle”, when both standards of reference are far, an additional unit of progress is perceived to have less value, compared to when either close to the initial or to the final state.

Study One tested the hypothesis that motivation to engage in goal-consistent behavior is lower when about halfway toward reaching a goal. Participants read a scenario about a dieter, specifying her weight when she began dieting (200 lbs), the desired weight goal (140 lbs), and her current weight, varying between-subjects (190 lbs vs. 170 lbs vs. 150 lbs). Then they were told to imagine that the dieter was ordering from a restaurant menu offering many options, ranging from a very healthy but less tasty dinner (salad and fruit) to a very tasty but less healthy dinner (cheeseburger and cake). Participants then indicated on a scale from 1 (tasty dinner) to 9 (healthy dinner) which alternative they expected the dieter to choose. Participants predicted the dieter would choose a less healthy (i.e. goal-inconsistent) dinner when halfway toward reaching her desired weight, compared to when she was either far from or close to her goal.

Study Two aimed at assessing how motivating an incremental unit of progress is perceived to be, as a function of the distance from the desired end-state. Respondents read a scenario describing a runner with a goal to run 10 miles. After running a certain distance, varying between-subjects (2 miles vs. 5 miles vs. 8 miles), he feels tired and feels he has the energy to run only about one more mile. Participants indicated on a scale from 1 (not motivated) to 9 (highly motivated) how motivated the runner would feel to keep running about one more mile. Participants thought the runner would feel less motivated to run an extra mile when halfway toward reaching his goal, compared to when he was either close to the beginning or close to the goal.

Study Three tested our theoretical explanation by explicitly manipulating the standard of reference used to monitor progress. Participants imagined they were enrolled in the frequent flyer program of Airline X, in which they could earn a free ticket after accumulating 25,000 miles. We manipulated the standard of reference adopted to monitor progress by informing participants of either how many miles they had already accumulated (4,000 vs. 12,000 vs. 21,000), or how many miles they still needed to reach the reward (21,000 vs. 12,000 vs. 4,000). Respondents then indicated the premium they would be willing to pay for an Airline X ticket that would earn them 3,000 miles, versus a $300 ticket from another airline that would earn them no miles. Specifically, they indicated how much more than $300 they would be willing to pay to fly with Airline X, thus adding 3,000 miles to those already accumulated (to-date), or deducting 3,000 miles from those they still needed (to-go). Respondents who were informed of how many miles they still needed to reach the reward were willing to pay most when close to the goal, less when halfway, and even less when far from the goal. Respondents who were informed of how many miles they had already earned were willing to pay a higher price when at the beginning and a lower price when halfway and near the end.

Across three experiments, we show that motivation to reach a goal is often higher when either far from the goal or close to the goal, and lower when halfway toward reaching the goal. We argue that this tendency to get stuck in the middle is due to the lower value an additional unit of progress is perceived to have when halfway toward reaching the goal.

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A large part of consumer behavior aims to achieve goals. Especially, in the context of reward programs, consumers invest a stream of efforts to earn future rewards. Previous literature has shown that their motivation to participate in and invest efforts to a reward program is largely driven by the perception of progress towards the goal (e.g., Carver and Scheier 1990; Kivetz, Urminsky and Zheng 2006; Nunes and Dreze 2006; Soman and Shi 2003).

This research introduces the “small area” effect, which demonstrates the role of proportional valuation of progress that each
action would achieve towards goal attainment. By “area”, we are referring to the size of goal progress that one can attend in terms of either accumulated progress to date or remaining progress to go (Koo and Fishbach 2008). For example, consumers can monitor their progress by counting the number of stamps collected so far versus stamps to be collected on a frequent-buyer card. We propose that the focus on the “small area” is more motivating than the focus on the “large area,” because an additional action is seen as yielding greater progress when people compare it to a small (vs. large) number of actions. Specifically, we predict when the level of progress is low (less than 50%), the focus on accumulated progress to date would be more motivating than remaining progress to go. For example, for a consumer who has progressed up to 20% of goal attainment, focusing on 20% of progress that is already made (small area) would be more motivating more than focusing on 80% of progress more to go (large area). Conversely, when the level of progress is high (more than 50%), the focus on progress to go would be more motivating than progress to date. For example, for a consumer who has progressed up to 80% of goal attainment, focusing on 20% of progress more to go (small area) would be more motivating than focusing on 80% of progress that is already made (large area).

Three studies tested these predictions. Study 1 was a large-scale field experiment, in which we monitored over 1000 consumer purchases at a sushi restaurant. Customers were offered to enroll for free in a reward program of the restaurant, in which they had to make ten sushi meal purchases in order to earn a reward of free meal. To allow tracking of their purchases, members were required to carry a frequent sushi card. We manipulated the focus on accumulated progress to date versus remaining progress to go, by providing customers with a card on which a sushi-shaped stamp is added for each purchase (i.e., the visual focus is on the number of completed slots) versus a card on which a sushi-shaped stamp is removed for each purchase (i.e., the visual focus is on the number of remaining slots). We tracked 1) the number of purchases on their first visit (i.e., their level of goal progress); 2) whether they return during the promotion period (3 months); and 3) the number of purchases on their second visit. As expected, we found that as members made higher progress on their card on their first visit, the card that emphasized remaining (vs. accumulated) purchases was more motivating—that is, they were more likely to come back and made more purchases on their second visit. That is, emphasizing a small area was more motivating than a large area.

To further investigate the underlying process of the effect, study 2 extended the results to the context of a coffee reward program, in which we experimentally manipulated both the level of progress (30% vs. 70%) and the focus on accumulated vs. remaining purchases. As expected, we found that when the level of progress was low (vs. high), those with a coffee card that emphasized completed (vs. remaining) slots indicated higher willingness to participate in the program and greater anticipated progress by their next purchase, and vice versa. Important, we further found that the increase in anticipated progress mediated the effect of emphasizing the small area on willingness to participate in the program.

In our last study, we show that the focus on small area is more motivating than the focus on the large area only when people have a high desire to approach the goal end-state. That is, we predict that when people have a low desire to complete the goal (e.g., gift card), the small area effect would not hold because people do not draw higher proportional value from making progress toward the end-state. In study 3, we manipulated participants’ desire to reach the end-state by employing two different reward programs at a bagel store—a regular “buy 10 get 1 free” reward card (high desire to reach the end-state) and a gift card that participants get discount for 10 purchases (low desire to reach the end-state). As predicted, we replicated previous effects in the reward card condition, whereas the effects were reversed in the gift card condition.

Taken together, these studies provide convergent evidence for the impact of importance of subjective evaluations of anticipated progress in goal pursuit. We believe that our findings have important theoretical and practical implications for motivation and goal behavior and for reward programs and marketing promotions.

“Almost There? The Role of Absolute vs. Relative Error in Perceived Progress Towards an Accuracy Goal”
Oleg Urminsky, University of Chicago, USA

Recent research on goal progress has investigated the impact of people’s perceptions of distance from a goal (e.g. Kivetz, Urminsky and Zheng 2006, Koo and Fishbach 2008). In this paper, we use the context of prediction accuracy to explore how people perceive differing degrees of progress to a goal. How do people determine when a prediction is closer to the accuracy goal (e.g. more or less accurate relative to the actual value)?

When people make a series of such assessments, the perceived discrepancy from the accuracy goal is primarily driven by attempting to assess and incorporate two salient pieces of information: the absolute and the proportional (percentage) error. Specifically, participants judgments exhibited what we term quasi-proportionality: the same absolute error will be evaluated as worse when the actual value is relatively small, while the same relative error will be evaluated as worse when the actual value is large. Furthermore, the relative weight on absolute vs. proportional distance in forming a distance judgment is systematically affected by the magnitude of the actual value. In particular, more weight is put on absolute error for large true values and more weight is put on proportional error for small true values.

In an initial study (N=40), which of a pair of election predictions is seen as more accurate is significantly affected by framing the outcomes in terms of the winning candidate’s share (large true numbers) or the losing candidate’s share (small true numbers), impacting how proportional errors are perceived.

In the second study, 111 participants evaluated a series of (16) pairs of predictions of different students’ test scores, choosing the one they saw as more accurate. Participants’ assessments exhibited quasi-proportionality, incorporating both absolute and proportional error, and the weights placed on each type of error in turn depended on the scale of the numbers (e.g. the average of the two actual values). The effects are shown not to be explainable by heterogeneity, not to vary based on beliefs about the distributions of scores and not to be affected by the participants’ own mathematical ability.

The third study (N=116) extends the findings to three additional contexts: election outcomes, weather predictions and salesperson’s outcomes. In particular, in assessing predictions of how many cars a salesperson will sell in a given time period, expressing the same rate expressed with small numbers over a shorter interval (one month) or with larger numbers over a longer interval (10 months) affects whether absolute errors or relative errors have more of an effect. When the same monthly rates for the sales predictions and outcomes are expressed as 10 month totals, participants place more emphasis in their judgments on absolute discrepancies relative (rather than proportional discrepancies).

The fourth study presented participants with a series of judgments designed specifically to distinguish between competing accounts of accuracy judgments. For example, in one task, 68% of participants evaluated a prediction of 20 vs. 24 actual as better than a prediction of 60 vs. 72 actual. In a separate task, only 36% of the participants evaluated a prediction of 68 vs. 72 actual as bet-
ter than a prediction of 204 vs. 216 actual, a significant difference (p=.04). Note that in both tasks, the proportional errors are equal for both predictions (20% in the first task and 6% in the second task) while the absolute errors are the same in the first option for both tasks (12) and and in the second option for both tasks (4). Thus, neither proportional nor absolute distance can explain the pattern of choices. In contrast, quasi-proportionality (specifically the shifting-weights account of incorporating absolute and proportional discrepancies) was consistent with the findings. Furthermore, the patterns of choices could not be explained by the established view of the psychophysics of difference judgments (e.g. Marks and Cain 1972) or by a simple averaging model (Wright 2000).

The implications of the proposed account of accuracy judgment for choices among available agents are discussed. The implications of quasi-proportionality, beyond the specific context of accuracy goals, are discussed. In particular, perceptions of general goal progress are proposed to be governed by quasi-proportionality, such that the perception of distance to the goal is determined by both absolute and relative distance remaining, with relative emphasis on absolute vs. relative determined by the scale of the numbers under consideration. The implications for motivation are discussed.

“Can You” or “Will You”: How Progress-Based Inferences Impact Motivation in Consumer Goal Pursuit

Ying Zhang, University of Texas at Austin, USA
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A classical proposal in the study of goal pursuit is that people’s motivational strength increases as they accumulates progress and approaches goal attainment (Hull 1932; Kivetz et al. 2006). Although it is well established that progress can have an impact on people’s subsequent motivation, it is less clear whether the source of the progress would change its impact, and whether such influences would vary depending on one’s relative positions in a pursuit. In the present research, we explore two different sources of motivation and 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, endowed and earned progress will have different impacts on individuals’ motivation, depending on the stage of goal pursuit.

Specifically, low progress on attaining a certain goal raises the question of whether the goal is attainable. The amount of existing progress toward attaining the goal and the effort that people have expended on making that progress, in turn, indicate the difficulty of goal attainment. Compared with those who made progress without expending effort, people who have invested effort in achieving the same low level of progress would infer that the attainment would be more difficult, and thus be less motivated in further pursuit.

When the level of progress on achieving a goal is relatively high, however, people feel that the goal attainment is secured and would shift to focus on the value of the attainable goal. In these times, progress that is acquired through personal effort should be more motivating because it signals one’s conscious commitment to pursuing the goal. In contrast, earned progress carries little diagnostic information in terms of signaling goal value. Accordingly, we expect that when the progress on attaining a goal is high, progress that individuals have earned by expending effort (vs. endowed progress) should elicit greater motivation in further pursuit.

We test these hypotheses in four studies. In Study 1, we tested our hypothesis in two consumer loyalty program scenarios. We manipulated the type of progress by describing it either as made through personal effort, or as endowed without effort. We then manipulated the level of progress by describing it as either a large or small portion of what was needed for the final reward. We found that when the progress level was low, participants whose progress was endowed (vs. earned) were more motivated to keep pursuing the goal despite inconveniences in accumulating points, but when the progress level on the program was high, those who made progress through personal effort (vs. endowed) expressed higher motivation.

In Study 2, participants completed a word-completion task and encountered a difficult question either at the beginning or toward the end of the task and progress that they accumulated before encountering the difficult question was either earned through their personal effort or was awarded by the computer. We found that among the participants with low progress, those who had made progress without expending effort persisted longer than did those who had invested effort to make the same amount of progress. Conversely, among the participants with high progress, those who had made the progress without expending effort persisted less than did those who had invested effort.

Study 3 tested our proposed mechanism and investigated whether it is indeed people’s inferences at different stages of goal pursuit that influence their subsequent motivation. Participants in this study completed a word recognition task on computers and were made to listen to annoying noise when waiting for a question, either toward the beginning or approaching the end of the task. We further manipulated the progress type by convincing participants that the progress they had accumulated was either the result of their effort investment, or was given to them for free by the program. We then measured participants’ persistence on waiting for the question under noise as well as the inference they made during the goal pursuit. We found that when the progress was low, participants with earned progress (vs. endowed progress) inferred lower attainability of the goal, and this inferred attainability decreased their persistence in waiting. When the progress on the task was high, however, participants with earned progress (vs. endowed progress) inferred greater value of the goal, and the higher inferred value further increased their persistence.

Finally, Study 4 used a field experiment to test our hypothesis in a real consumption context. In this 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 received the initial progress on the card either because they had made past purchases at the shop (earned progress) or because the shop was running a general promotion (endowed progress). We found that although highlighting customers’ efforts in making progress increased their subsequent purchase frequency when they were close to redemption, doing so at early stages of the program actually decreased their purchase frequency.

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