The Effect of Goal Specificity on Consumer Goal Reengagement

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Consumers often need to decide if they want to reengage a goal, such as a goal of losing weight, a goal of saving money, or a goal of performing well on a video game. This research finds that consumers are more likely to reengage a goal when they have set a high-low range goal (e.g., lose 2–4 pounds this week) than when they have set a single number goal (e.g., lose 3 pounds this week). This effect is driven by the greater attainability and greater challenge of the high-low range goal, which then leads to a greater feeling of accomplishment. Thus, these findings suggest that in order to keep a consumer motivated over time to continue with an activity or continue using a product, that consumer should first set or be given a high-low range goal.

Consumers must often decide whether they want to reengage a goal. For instance, a consumer who has set a goal to lose weight might see that he lost 2 pounds in a week and then decide to either reengage the goal of losing weight by setting a new goal for the following week or to stop trying all together. Furthermore, a consumer who is pursuing such a goal can set either a relatively specific goal or a relatively broad goal. In particular, a consumer who wants to lose weight might try to lose 2 pounds a week, a consumer who is trying to save money might try to save $100 a month, or a consumer who wants to beat a video game might try to reach 500 points (what we will refer to as a single number goal). Or, instead, a consumer might try to lose 1–3 pounds a week, try to save between $50 and $150 a month, or try to attain between 250 and 750 points on a video game (what we will refer to as a high-low range goal). In this research, we examine whether the type of goal

that is set (single number or high-low range goal) will have a systematic effect on the likelihood that consumers will want to reengage the goal, which is a topic that has not yet received much research attention. For example, would a consumer be more likely to reengage a goal of losing weight if this consumer were to set either (1) a weekly single number goal or (2) a weekly goal that could fall within a range of outcomes?

We propose that high-low range goals and single number goals will influence consumer goal reengagement through feelings of accomplishment. Prior research on feelings of accomplishment shows that they are likely influenced by two major factors: (1) the perceived attainability of the goal and (2) the perceived challenge of the goal (Atkinson 1957; Oettingen et al. 2004). We propose that high-low range goals differ from single number goals in important ways that influence the perceived attainability and challenge of the goal and thus feelings of accomplishment and interest in goal reengagement.

In particular, high-low range goals provide two salient reference points while single number goals offer only one reference point. For example, when a dieter weighing 300 pounds who wants to lose weight sets a weekly weight loss goal, she may set either a high-low range goal to lose 1–3 pounds, or a single number goal to lose 2 pounds. The high-low range goal offers the dieter the "best of both worlds" with two reference points relating to how the goal may be perceived: the low end of the range (1 pound) reflects the extent to which the goal is attainable, and the high end of the range (3 pounds) reflects the extent to which the goal is challenging. The single number (all-or-nothing) goal offers either one attainable target, one challenging target, or

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FIGURE 1

CONCEPTUAL FRAMEWORK
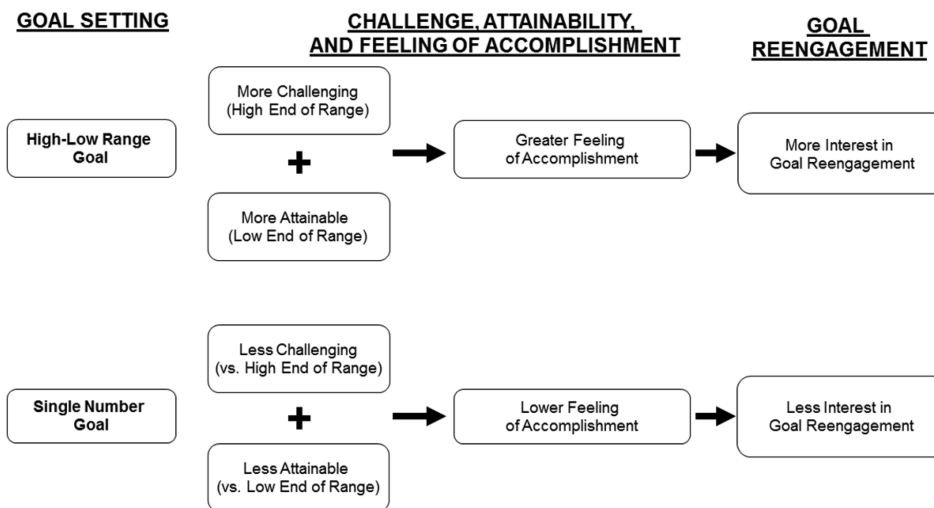
a compromise of the two, but cannot separately offer both. Thus, we propose that consumers who are pursuing a range goal will feel a greater sense of accomplishment than consumers who are pursuing a single number goal, because a range goal offers greater attainability and challenge than the single number goal. As a result, those consumers with a range goal should be more likely to want to reengage the weight loss goal and keep trying to lose weight, than those with a single number goal.

Our research contributes to the literature in a number of ways. First, we examine factors that influence consumer goal reengagement, whereas prior research has tended to focus on other aspects of goals, such as goal attainment. Second, we show that interest in goal reengagement is systematically influenced by the type of goal—in this case, whether the goal is a single number or high-low range goal—whereas past work has tended to look at the type of goal as an antecedent of performance (e.g., Klein, Whitener, and Ilgen 1990; Wright and Kacmar 1994). Third, we show that the relationship between type of goal and interest in goal reengagement is driven by feelings of accomplishment, which are in turn influenced by the attainability and challenge of the goals. And, we find that high-low range goals offer both greater attainability and challenge than single number goals.

CONSUMER INTEREST IN GOAL REENGAGEMENT

We next examine prior work on goal setting, and relate that research to our focus on the setting of high-low range goals and single number goals. We then consider prior work relevant to our focus on how the setting of these different types of goals can influence the interest in goal reengagement.

Different Ways to Set a Goal

It is clear that consumers can set different kinds of goals. In this research, we focus on goals that can be set as either single number goals or as high-low range goals; which type of goal is set can influence a consumer's interest in goal reengagement. Prior work has found that goals can serve as reference points that influence a consumer's willingness to initiate pursuit of a goal and to continue to pursue the goal over time (Heath, Larrick, and Wu 1999).

However, little prior work has examined either the meaning of the reference points that are generated or the process underlying how consumers use goals as reference points when ascertaining perceived goal attainability and challenge. We build on prior work on goal setting to identify how consumers will interpret the reference points of the high-low range goal. In particular, in setting a goal, prior research shows that consumers are concerned with two reference points: (1) what they perceive to be possible and attainable and (2) what they aspire to achieve (Latham and Locke 1991). We propose that a high-low range goal may be able to capture both of these reference points, as we detail below. Specifically, we next discuss how high-low range goals and single number goals serve as reference points that influence perceptions of attainability, challenge, and feelings of accomplishment. Our research examines what the two anchor points of a high-low range goal may mean to consumers, compared to what a single number goal may mean to consumers, and how this may translate into interest in goal reengagement (see fig. 1).

The Influence of Goal Type on Goal Reengagement

As the above section notes, a goal can be set as either a single number or as a high-low range. We now discuss the implications of setting these different types of goals on goal reengagement.

The lowest, most attainable goal level one expects to reach is the action goal (Gould 1939; Lewin et al. 1944; Locke and Latham 1990). The action goal, the goal a consumer expects to get, can be aligned with the concept of the actual self (e.g., Higgins 1987) because the action goal is based on an assessment of past behavior and how that translates to what one expects to be attainable. We propose that for a high-low range goal, the action goal is consistent with the lower (attainable) end of the range. The attainable end of the range is important for goal reengagement because it encourages a relatively more optimistic outlook on the goal (Carver and Scheier 1990). The goals consumers deem to be based on their actual self (e.g., vs. a goal that is more aspirational in nature) are more self-relevant due to the fit between the goal and the actual self (Cantor and Sanderson 1999).

According to prior work on goals, the highest goal level is the ideal or hoped-for goal (Gould 1939; Lewin et al. 1944; Locke and Latham 1990). This more challenging type of goal reflects future aspirational performance and is more aligned with the ideal self (Higgins 1987). Prior work has shown that consumers have a greater sense of accomplishment, pride, and self-respect with more challenging goals (Mento, Locke, and Klein 1992) because they need to work harder to achieve these goals. In addition, the literature on tensile (e.g., 10%–40% off) versus precise (e.g., 25% off) price claims supports this notion and finds that the high end of a tensile discount range (e.g., 40%) can encourage feelings of optimism relating to the possibility of getting the highest discount (Dhar, Gonzalez-Vallejo, and Soman 1999), particularly when the span of the numerical range is relatively larger (Biswas and Burton 1993). In addition, consumers are typically more motivated to engage in tasks (e.g., playing video games) when the ideal self is evoked (Przybylski et al. 2012). Similarly, the aspirational nature of the high end of the range goal plays an important role in motivating goal reengagement. We propose that the high end of the high-low range goal is reflected in this aspirational and challenging aspect of the goal.

Feeling sufficiently challenged by a goal is a key element in creating a feeling of accomplishment in goal pursuit (Deci and Ryan 1985, 1991; Ryan and Deci 2000), but only to the extent that there is a reasonable possibility that the goal can someday be attained (Csikszentmihalyi and Nakamura 1989), which is more likely for self-set than given goals. Taken together, the low and high ends of the range goal provide two reference points to frame the consumer's goal in a way that accomplishes two different outcomes (attainability and challenge) important for goal reengagement.

While the two end points of a high-low range goal are expected to serve different purposes, this may not be possible with a single number goal, as this goal only offers one reference point. When a consumer chooses a single number goal, this consumer may have to pick a number that is either relatively attainable, relatively challenging, or some compromise between these two purposes.

Consumer goal reengagement is expected to be influenced by the sense of accomplishment felt about the goal (Gollwitzer and Oettingen 2011). This sense of accomplishment stems from pursuing a goal that is both attainable and challenging (Garland 1985; Oettingen et al. 2004; the literature also refers to related concepts of feasibility and desirability [Bagozzi and Dholakia 1999; Gollwitzer 1990]). Thus, we propose that goal reengagement will be even greater if the goal is both attainable and challenging, as the sense of accomplishment is expected to be greatest when the goal is both attainable and challenging. Furthermore, we argue that a high-low range goal offers higher levels of both attainability and challenge than a single number goal.

As depicted in our conceptual framework (fig. 1), we propose that (a) the higher levels of attainability from the low end of the range and (b) the greater challenge of the high end of the range will lead to greater feelings of accomplishment, which will then lead to a greater interest in reengaging the high-low range goal than the single number goal. It is important to note that this is expected to occur because of the greater sense of accomplishment from the high-low range goal. We next examine alternative explanations for our proposed effects.

Differentiating Our Research from Prior Work

In this section, we show how our conceptual framework offers unique insights on goal reengagement by comparing our model with alternative explanations. Even though these alternative explanations have not tended to focus on goal reengagement, it is nevertheless important to consider them, because they have focused on related issues, such as motivation toward attaining a goal. These alternative explanations rely on either (1) the amount of progress that has been made toward attaining a goal, (2) the amount of success that has been achieved toward reaching a goal, or (3) the actual performance that has been achieved.

First, prior work has looked at the likelihood of completing a goal as a function of how much progress has been made toward that goal. In particular, research has found that perceived progress tends to increase motivation (e.g., Drèze and Nunes 2011; Kivetz, Urminsky, and Zheng 2006; Soman and Shi 2003; although note that Fishbach and Dhar [2005] find situations where progress can actually hinder goal pursuit). For example, consumers are more likely to increase coffee purchase frequency as part of a reward program as they approach a free coffee reward (Kivetz et al. 2006). Or, research has found that consumers tend to increase their car wash purchases as they get closer to a free car wash reward (Nunes and Drèze 2006). However, note that while the notion of progress is well defined in this prior work, it is somewhat ambiguous in our research. For ex-

ample, if one consumer sets a range goal to lose between 2 and 8 pounds, and actually loses 4 pounds, whereas a second consumer sets a single number goal of 5 pounds and actually loses 4 pounds, it is not clear whether the first or second consumer would have achieved more progress (either objectively or subjectively). Yet, this alternative explanation would be possible if consumers did perceive that they had made greater progress with the high-low range goal than the single number goal.

Second, it could be argued that our framework is driven more by past levels of success than by feelings of accomplishment. In particular, it is apparent that those in the range condition are more likely to "succeed," in the sense that they beat their minimum goal, than those in the single number condition, because the minimum goal in the range condition is expected to be lower, and easier to beat, than the single number goal. However, our model considers this "success" to be closely related to the attainability of the goal (the low end of the high-low range goal). In other words, we believe that consumers will be more likely to "succeed" with the range goal, because one part of the range goal (the low end) is more attainable than the single number goal, but we also believe that this will not be enough to offer a complete explanation of goal reengagement. Rather, we believe and will show that challenge and accomplishment are both required elements, above and beyond just the attainability (or "success") of the goal. Furthermore, note that feelings of accomplishment (due to perceptions of attainability and challenge) are a subjective measure, whereas "success" is more of an objective measure, and we argue that these subjective measures are a better explanation for our effects.

Third, it could be argued that those with a high-low range goal will be more interested in goal reengagement than those with a single number goal because consumers with a high-low range goal will experience greater levels of actual performance. For example, it may be that a consumer with a goal to save between $50 and $100 ends up saving $90, while a consumer with a goal to save $75 only saves $60. In other words, if those in the high-low range condition perform better than those in the single number condition, then any greater interest in goal reengagement could be due to higher levels of performance rather than greater feelings of accomplishment. However, in sum, we believe and will provide evidence that our explanation, based on feelings of accomplishment, may offer a better explanation than the alternative accounts listed above.

EMPIRICAL OVERVIEW

This research proposes that goal type, such as whether a goal is a high-low range goal or a single number goal, influences interest in goal reengagement. Five experiments test our theorizing. In study 1, we conduct a longitudinal field experiment to examine the impact of goal type (high-low range vs. single number goal) on reengagement in a weight loss goal. Study 2 further generalizes these findings by examining another consumer goal: resisting eating tempting food. Studies 3A and 3B examine the underlying process by considering a lower single number goal, which is more attainable and less challenging than a typical single number goal and by considering a higher single number goal, which is less attainable yet more challenging than a typical single number goal. Study 4 examines a boundary condition when no skill is required to pursue a high-low range or single number goal. Finally, study 5 tests whether our results are due to reference points established in setting actual goals, or to any (even irrelevant) reference points. These studies demonstrate that both goal attainability and challenge are likely necessary for greater goal reengagement.

Furthermore, in our studies, we measure the attainability and challenge of the goals both objectively and subjectively (and find that these measures are consistent with one another). In particular, when evaluating objective attainability, we consider how the lower end of the high-low range goal compares to the single number goal; when evaluating objective challenge, we consider how the higher end of the high-low range goal compares to the single number goal. On the other hand, when evaluating subjective attainability, we measure perceptions of whether the goal is attainable, feasible, and realistic, and when evaluating subjective challenge, we measure perceptions of the goal's perceived challenge and difficulty.

We now turn to study 1, a field experiment where we assigned adult members of a weight loss program to either a high-low range goal or a single number goal, to assess whether a high-low range goal or a single number goal will lead to greater interest in goal reengagement.

STUDY 1

The purpose of study 1 is to test our prediction that consumers with a high-low range goal will express a greater interest in goal reengagement than those with a single number goal. Study 1 was a longitudinal field experiment measuring actual consumer decisions.

Procedure, Participants, and Research Setting

Study 1 was a 2 (goal type: high-low range, single number) × 3 (weekly timing: T1, T2, T3) mixed design experiment. Goal type was a between-subjects factor (across each weekly time period, participants set the same type of goal, either a high-low range or a single number); participants continued to set the same type of goal for the duration of the 10-week program. Performance (weight lost) was measured at three points in time (T1, week 1; T2, week 2; and T3, week 3). Goal reengagement was measured at the end of the 10-week period (if the participant reenrolled in the program). Participants were 45 adult female members in a weight loss program, mean age of 47 years old (range 24–71) and mean body mass index of 30.38 (BMI 30 or greater is classified as obese). Employees, spouses, or dependents of a large organization in the Midwest United States have the option to enroll in the weight loss program using their employee health benefits. Participants are under

the care of a licensed dietitian, who assists participants in establishing and pursuing safe weight loss goals. During the program, participants attended a weekly 1-hour group session in which they weighed in privately and then learned about healthy lifestyle practices with the group. In exchange for their participation in our study, participants were entered in a weekly raffle for $25 gift cards to Whole Foods, Dick's Sporting Goods, and Target.

For our study, participants were assigned to one of two weight loss goal conditions: single number goal or high-low range goal. We collected baseline information on the participants at their first session (i.e., at T-0). At T-0, participants also established their weight loss goal for the coming week (e.g., a single number goal such as lose 1 pound or a high-low range goal such as lose 0–2 pounds). At the beginning of the hourly sessions in T1, T2, and T3, participants weighed in and established their weekly weight loss goal.

We measured goal reengagement by examining participants' actual continuation with another round of the 10-week program after its completion. Participants pay a $25 fee every 10 weeks to participate in the weight loss program. We analyzed actual reenrollment data, which reflected whether or not each participant chose to continue to pursue her weight loss goal by reenrolling in the program. Finally, we examined performance (amount of weight lost).

Results

Objective Challenge. We ran a repeated measures ANOVA with time as a within-subjects factor and goal type as a between-subjects factor. We measured challenge and attainability in this study with a relatively objective measure (the goal that was set). In this study, we measured the challenge inherent in the task by examining how the high end of the range goal (e.g., if the goal was to lose 1–3 pounds, then we would focus on the 3 pounds, since it occurs at the high end of the range) compared to the single number goal, averaged over the 3-week period. Consistent with our theorizing about challenge, single number goals were significantly less challenging than the high end of the range goals ($M_N = 1.91$ pounds vs. $M_{RH} = 2.64$ pounds; $F(1, 43) = 4.15$, $p < .05$); the time main effect ($F < 1$) and their interaction ($F(2, 86) = 2.50$, $p > .12$) were not significant.

Objective Attainability. We measured the objective attainability of the task by examining how the low end of the range goal (e.g., if the goal was to lose 1–3 pounds, then we would focus on the 1 pound, since it occurs at the low end of the range) compared to the single number goal, averaged over the 3-week period. In terms of attainability, single number goals set by participants were significantly less attainable than the low end of the range goals ($M_{RL} = 0.82$ pounds vs. $M_N = 1.91$ pounds; $F(1, 43) = 14.90$, $p < .001$), qualified by its interaction with time ($F(2, 86) = 3.82$, $p < .05$); the time main effect was not significant ($F < 1$). Univariate contrasts reveal insight into the nature of the 2×3 interaction. The high-low range goal was mar-

ginally more attainable than single number goals during T1 ($F(1, 43) = 2.95$, $p < .1$), and the high-low range goal was significantly more attainable than single number goals during T2 ($F(1, 43) = 11.65$, $p < .001$) and T3 ($F(1, 43) = 12.45$, $p < .001$). See the online appendix for further details.

Goal Reengagement. We measured participants' interest in goal reengagement using actual reenrollment in the program. We ran a logistic regression in which program reenrollment was the dependent variable, goal type (high-low range or single number) was the independent variable, and the covariate was performance (overall weight lost during the three weeks). Weight loss program members with high-low range goals reenrolled in the program at a marginally higher rate than those with a single number goal ($M_R = 79.61\%$ vs. $M_N = 53.75\%$; Wald $\chi^2 = 2.74$, $p < .1$). Performance was not a significant covariate in the model (Wald $\chi^2 < 1$, $p > .8$).

Performance Level. We next look at the performance, in terms of weekly weight loss, of the single number and the high-low range groups. We ran a repeated measures ANOVA in which weekly weight loss was a repeated factor and goal type was the between-subjects factor. The goal type factor was not a significant predictor of weight loss (performance); average weekly performance (weight loss averaged over T1, T2, and T3) for consumers in the high-low range condition was 0.89 pounds and for consumers in the single number condition was 0.76 pounds ($F < 1$); absolute weight lost over the 3-week period was 2.67 for participants with a high-low range goal and 2.26 for those with a single number goal. Furthermore, the main effect of weekly weight loss ($F(1, 43) = 2.17$, NS) and the weight loss by goal type interaction were also not significant ($F < 1$). Thus, our finding that interest in goal reengagement was greater with the high-low range group than the single number group cannot be explained by past performance alone.

Discussion

Study 1 offers support for our main prediction in a real world, longitudinal context with a highly important goal. In particular, participants with high-low range goals were marginally more interested in goal reengagement than participants with single number goals. However, one limitation of study 1 is that it was a field study, and thus there was less experimenter control than in a lab study. Another limitation of study 1 is that it was run over a longer period of time (several weeks), and thus it may be that the effects we observed only occur after consumers have had repeated feedback. Study 1 also did not address feelings of accomplishment or subjective measures of challenge and attainability. In light of these limitations, we conducted study 2. This study looks at consumers resisting a temptation.

STUDY 2

The purpose of study 2 was to overcome the limitations of study 1 and to generalize our findings to another common

consumer situation. In particular, consumers in modern society must often set goals to avoid overeating (Drapkin, Wing, and Shiffman 1995).

Participants and Procedure

This study was a one factor between-subjects experiment that manipulated type of goal as either a single number goal or a high-low range goal. Participants were 64 undergraduate business students at the University of Kentucky participating in exchange for course credit. When participants entered the laboratory, they were given a regular sized bag of M&M candies (containing 56 M&Ms). We explained that their goal was to eat as few M&Ms as possible while the M&Ms were directly in front of them for 25 minutes (participants watched unrelated videos and completed unrelated filler studies during this time). Participants were asked to set either a single number or a high-low range goal for the amount of M&Ms they would eat.

In this study, a relatively lower number reflects a more challenging goal. Thus, in this particular task, participants were instructed to try to eat as few M&Ms as possible. If a participant set a range of 3–7 M&Ms, the challenging number in the high-low range goal is the lower number (e.g., 3 M&Ms) and the attainable number is the higher number (i.e., 7 M&Ms). Thus, we evaluated objective challenge by comparing the low end of the high-low range goal to the single number goal; and we evaluated objective attainability by comparing the high end of the high low range goal to the single number goal.

At the end of 25 minutes, participants responded to questions about feelings of accomplishment ("Completing this task made me feel like I accomplished something today" and "This task made me feel successful") and goal reengagement ("I am motivated to do this again," "I would like to do this again sometime," and "I would like to do a task like this in the future"), using 7-point dis/agree scales. Participants' remaining M&Ms were weighed to measure consumption rate, which we used as the performance level.

Results

Objective Challenge and Attainability. Participants in the high-low range condition set a goal to eat between 2.87 and 7.80 M&Ms, while participants in the single number condition set a goal to eat 4.97 M&Ms. We ran a one-way ANOVA to examine levels of objective challenge and attainability of the two types of goals, as was done in the prior study. We found that the lower end of the range goal was significantly more challenging than the single number goal ($M_{R1} = 2.87$ vs. $M_N = 4.97$; $F(1, 62) = 3.90$, $p < .05$), and the higher end of the range goal was significantly more attainable than the single number goal ($M_{R2} = 7.80$ vs. $M_N = 4.97$; $F(1, 62) = 3.82$, $p = .05$); see the online appendix for further details.

Feelings of Accomplishment. We ran a one-way ANCOVA model on feelings of accomplishment with performance (number of M&Ms eaten) as the covariate. The high-low range goal (relative to the single number goal) left participants with marginally greater feelings of accomplishment ($M_R = 3.68$ vs. $M_N = 2.87$; $F(1, 61) = 3.53$, $p = .065$). Performance was a marginally significant covariate in the model ($F(1, 61) = 3.13$, $p = .082$).

Goal Reengagement. We also ran a one-way ANCOVA model for goal reengagement, with performance as the covariate. The high-low range goal (vs. the single number goal) left participants with significantly greater interest in goal reengagement index (Cronbach $\alpha = 0.84$; $M_R = 3.40$ vs. $M_N = 2.52$; $F(1, 61) = 4.71$, $p < .05$). Performance was not a significant covariate in the model ($F < 1$) .

Performance. Participants did not significantly differ across conditions in the quantity of M&Ms eaten ($M_R = 5.37$ vs. $M_N = 5.09$; $F < 1$).

Mediation Analysis. We ran a mediation analysis to examine whether feelings of accomplishment mediated the relationship between goal type (high-low range vs. single number) and interest in goal reengagement (Hayes 2012; Zhao, Lynch, and Chen 2010). The independent variable was goal type, the mediator was feelings of accomplishment, the dependent variable was the goal reengagement index, and performance (quantity of M&Ms eaten) was included as a covariate. The bootstrapping analysis showed that feelings of accomplishment mediated the effect of goal type on interest in goal reengagement. The mean indirect effects excluded zero for feelings of accomplishment ($a \times b = .5165$; 95% CI $= .0106$ to 1.0540). Furthermore, in this mediation model, the direct effect of goal type on goal reengagement was no longer significant ($t = 1.25$, $p > .20$), suggesting that feelings of accomplishment served as the mediator, as predicted. These results thus suggest that feelings of accomplishment served as the mediator.

Discussion

The studies thus far support our theorizing and add process measures that build more confidence in our conceptual model. It is also interesting to note that performance levels were not significantly different across conditions, and the inclusion of performance as a covariate did not influence our results. Thus, it is unlikely that the greater interest in goal reengagement in the high-low range condition was due to a difference in past performance. In particular, if the performance in the high-low range condition had been greater than the performance in the single number condition, this could have served as a viable alternative explanation. This suggests that the participants were more concerned with the sense of accomplishment that emanated from the different goals than the level of past performance.

One limitation of the initial studies is that they assume that objective measures of attainability and challenge would be consistent with subjective measures. For instance, we assumed in study 1 that if one consumer's goal was to lose between 1 pound and 5 pounds, and another consumer's

goal was to lose 3 pounds, the first consumer set a more attainable goal (1 is less than 3) and a more challenging goal (5 is greater than 3). However, we do not know if in fact consumers would actually perceive these differences as we assumed.

Thus, we ran an additional study to test this assumption. We predict that high-low range goals will be perceived as both more challenging and more attainable than single number goals. In particular, we predict that the high end of the high-low range goal will be perceived as more challenging than the single number goal, and the low end of the high-low range goal will be perceived as more attainable than the single number goal.

We asked 90 paid Amazon Mechanical Turk (MTurk) participants to set three different types of goals: to drink more water, to save money, and to lose weight. Participants were randomly assigned to either a high-low range goal or a single number goal and had the same goal structure (high-low range or single number) for each goal category (drinking water, saving money, and losing weight). For example, for saving money, participants were asked: "Please set a goal for saving money over the next 3 months. There are various ways to save extra money, such as cutting back on items that are not necessities or finding new sources of extra income." For those setting a high-low range goal we asked, "Please complete the following sentence: My goal is to save between _____ and _____ dollars in the next 3 months." Participants setting a single number goal were asked: "Please complete the following sentence: My goal is to save __ dollars in the next 3 months." After setting each goal, participants indicated their subjective judgments of attainability and challenge by rating the extent to which the goal (either the single number goal or each end of the high-low range goal) was perceived to be attainable (realistic, feasible) and challenging (challenging, difficult) on a 7-point scale (1 = not at all, 7 = very much).

To analyze perceived attainability index, we ran a repeated measures ANOVA. Goal structure (single number vs. high-low range) was the between-subjects factor and the goal category (drinking water, saving money, losing weight) was the within-subjects factor. Analysis revealed a main effect of goal structure, such that the low end of the range (vs. the single number) goals were perceived to be significantly more attainable ($M_{LR} = 6.07$ vs. $M_N = 5.41$; $F(1, 88) = 12.33$, $p < .001$; averaged across drinking water, saving money, and losing weight). Means by category are provided in the online appendix.

We again ran the repeated measures model to analyze perceived challenge index. Analysis revealed a main effect of goal structure, such that the high end of the range (vs. the single number) goals were perceived to be significantly more challenging ($M_{HR} = 5.08$ vs. $M_N = 4.15$; $F(1, 88) = 14.66$, $p < .001$; averaged across drinking water, saving money, and losing weight). These findings support our idea that consumers perceive high-low number goals to be both more challenging and more attainable than single number goals.

In the next two studies, we further test our conceptual model by adding conditions where the single number goal is either (1) just as challenging but less attainable than the high-low range goal (what we will refer to as a "high single number goal") or (2) just as attainable but less challenging than the high-low range goal (what we will refer to as a "low single number goal"). For instance, if a high-low range goal is to lose between 2 and 8 pounds, the single number goal as we have seen from studies 1 and 2 tends to be somewhere in between these values (e.g., 5 pounds), which tends to make it both less challenging and less attainable than the high-low range goal. However, it is also possible that a consumer could set a single number goal that is just as challenging as the high-low range goal (8 pounds) but is not as attainable (a high single number goal). Or, it is possible that a consumer could set a goal that is just as attainable as the high-low range goal (2 pounds) but not as challenging (a low single number goal).

Our framework suggests that neither the high single number goal nor the low single number goal will result in as much interest in goal reengagement as the high-low range goal. If true, this would provide a stronger argument that both attainability and challenge are necessary to increase feelings of accomplishment and thus interest in goal reengagement. In other words, if a single number goal is (1) neither as challenging nor as attainable as a high-low range goal (as was examined in studies 1 and 2), or (2) only just as challenging as a high-low range goal (a high single number goal), or (3) only just as attainable as a high-low range goal (a low single number goal), then in all three situations goal reengagement should be greater with the high-low range goal, because only in that case is the goal both more attainable and more challenging than the single number goal.

We also wanted to examine these additional conditions to attempt to further rule out the idea that our results are simply due to a consumer attaining a goal. In particular, it could be argued that interest in goal reengagement increases for high-low range goals compared to single number goals because it is easier to attain a high-low range goal, consumers will thus feel more success from that attainment, and then they will be more likely to reengage the goal. However, if we find that a (low) single number goal that is just as attainable as the low end of the range goal (lose 2 pounds) results in less interest in goal reengagement than the high-low range goal, then it would offer more support for the idea that the greater challenge from the high-low range goal is also needed to increase interest in goal reengagement.

Study 3A adds in a self-set "low" single number goal (just as attainable as the high-low range goal but not as challenging), but it does not add in a self-set "high" single number goal (just as challenging but less attainable) since prior research has shown that it is difficult to get consumers to consistently self-select a single number goal that is truly very challenging (e.g., Hinsz 1995). To address this issue, study 3B adds in both a "low" single number goal and a "high" single number goal, because in this study we assigned the goals to the respondents, as a way to ensure that the

"high" single number goal would truly be as challenging as the high end of the range goal. Furthermore, study 3A relies on objective measures of attainability and challenge, and study 3B relies on subjective measures of attainability and challenge.

STUDY 3A

The purpose of this study is twofold: to demonstrate the process outlined in our conceptual model, and to generalize the results from our prior studies. Furthermore, we introduce a new consumer goal task: a shopping task in which participants try to purchase items on their grocery list at the lowest price by using coupons and price comparisons.

Participants and Design

Participants were 174 paid MTurk respondents (M_{AGE} = 37.09, 38% male). In this study, participants engaged in a shopping task. Using a grocery list and coupon book, participants attempted to complete their shopping task in 4 minutes. Their goal was to purchase grocery items at the lowest available price; they earned points by selecting the lowest priced items. We first gave participants a few practice shopping items to familiarize them with the task. Then participants were asked to set a high-low range, single number, or low single number goal for the number of points they would earn (by saving money) in the game. We gave participants the following instructions corresponding to their experimental condition:

> **High-Low Range Condition Instructions**: Before you begin the shopper game, please set a goal for the number of points you will earn in the 4-minute period: My goal is to earn between ____ and ____ points in a 4-minute period.
> **Single Number Condition Instructions**: Before you begin the shopper game, please set a goal for the number of points you will earn in the 4-minute period: My goal is to earn ____ points in a 4-minute period.
> ***Low* Single Number Condition Instructions:** Before you begin the shopper game, please set a realistic and attainable goal for the number of points you will earn in the 4-minute period: My goal is to earn ____ points in a 4-minute period.

There were 25 items on the grocery list, and participants were given 16 coupons (e.g., 37 cents off brand A shampoo, 10% off brand C coffee); some coupons were not relevant to their grocery list. Then participants went through a virtual grocery store in which they were offered items at various prices. They earned 2 points for each item that they purchased at the lowest price (after coupons), 1 point for choosing the second lowest price, and they lost 1 point for purchasing an item not on their list. The maximum possible score was 50 points.

After completing the shopping task, participants were asked about their interest in goal reengagement: ("I want to try to get a better score in the future," "I would like to play this game again," and "I am motivated to play this game

again"); all items were on a 7-point "not at all/very much" scale.

Results

Objective Challenge and Attainability. To assess differences in objective challenge, we evaluated the high end of the high-low range goal versus the single number goal. We ran a one-way ANOVA to assess the differences in the goals shoppers assigned for themselves by condition; the overall model was significant ($F(2, 171)$ = 18.30, $p < .001$). As in prior studies, the high end of the high-low range goal was significantly more challenging than the single number goal (M_{HR} = 36.91 vs. M_N = 30.97; $t(171)$ = 2.63, $p < .01$). In addition, as expected, the high end of the high-low range goal and the single number goal were significantly more challenging than the low single number goal (M_{HR} = 36.91 vs. M_{LN} = 23.12; $t(171)$ = 6.03, $p < .001$) and (M_N = 30.97 vs. M_{LN} = 23.12; $t(171)$ = 3.07, $p < .005$).

To assess differences in objective attainability, we evaluate the low end of the high-low range goal versus the single number goal. We ran a one-way ANOVA to assess the differences in attainability of the goals; the overall model was significant ($F(2, 171)$ = 7.30, $p < .001$). As in prior studies, the low end of the range goal was significantly more attainable than the single number goal (M_{LR} = 24.07 vs. M_N = 30.97; $t(171)$ = 3.07, $p < .005$). As expected, the low single number goal was also significantly more attainable than the single number goal (M_{LN} = 23.12 vs. M_N = 30.97; $t(171)$ = 3.49, $p < .001$), and the low end of the range and low single number goal were not significantly different ($p > .65$).

Goal Reengagement. We ran an ANCOVA on goal reengagement, with performance (score earned) as the covariate; the overall model was significant ($F(2, 170)$ = 4.15, $p < .05$). The ANCOVA model revealed that consumers with high-low range goals had greater interest in goal reengagement than those with single number goals (M_R = 5.23 vs. M_N = 4.51; $t(170)$ = 2.77, $p < .01$), and relative to those with low single number goals (M_R = 5.23 vs. M_{LN} = 4.66; $t(170)$ = 2.09, $p < .05$), supporting our predictions. The single number and low single number goals were not significantly different ($p > .52$). The performance covariate was not a significant covariate in this model ($F < 1$).

Performance Level. As in prior studies, there was no significant difference in performance (points earned) across conditions (M_R = 27.44 vs. M_{LN} = 24.72 vs. M_N = 26.60; $F(2, 172)$ = 1.19, $p < .31$).

Another alternative explanation for our results, besides those discussed earlier, could be that the amount by which participants beat (or missed) their goals could explain differences in goal reengagement. For instance, if a consumer in the high-low range condition beat (the low end of) her goal by 5 points, while a consumer in the single number condition beat her goal by only 1 point, then, according to this explanation, the first consumer would have more interest

in goal reengagement because she was pleased with the (greater) amount by which she beat her goal. If this explanation is correct, it would suggest that those consumers in the high-low range condition beat their goal by more points than consumers in the single number condition, and this led those in the high-low range condition to be more interested in goal reengagement. However, in study 3A we found that participants in the low single number condition and the high-low range condition did not significantly differ in their goal-to-performance outcomes (i.e., difference between performance and goal; $M_R = 3.37$ vs. $M_{LN} = 1.60$; $t(171) = .60$, $p > .55$). This suggests that factors beyond the amount by which a goal is surpassed are needed to explain differences in goal reengagement between these conditions.

In addition, the amount by which participants in the single number condition beat their goals ($M_N = -4.37$; meaning that they did not beat their goals on average) were significantly lower than both high-low range goals ($M_R = 3.37$; $t(171) = 2.63$, $p < .01$) and low single number goals ($M_{LN} = 1.60$; $t(171) = 2.03$, $p < .05$). This is consistent with the fact that the single number goal was less attainable than both the high-low range and low single number goals. These findings suggest that the greater interest in goal reengagement from the high-low range goals is due to a goal that is both relatively challenging and attainable.

Discussion

Using a simulated marketing task that many consumers are likely to experience, trying to save money while grocery shopping, study 3A demonstrated that a high-low range goal leads to a greater interest in goal reengagement than either a single number goal or a low single number goal because only the high-low range goal offers two important components: challenge and attainability. We now turn to study 3B, which further examines the process underlying the effect of goal type on goal reengagement.

STUDY 3B

The purpose of study 3B is to test whether a high-low range goal will result in greater interest in goal reengagement than either a low single number goal or a high single number goal. It also adds in subjective measures of attainability, challenge, and accomplishment.

Participants and Design

Participants were 256 undergraduates at Arizona State University participating in exchange for course credit. We used a one-way, between-subjects three-cell design (assigned goal: high-low range [2–8], low single number [2], or high single number [8]). Participants were given some practice five-letter anagram puzzles to familiarize them with solving anagrams. Next, participants were assigned a goal for the number of anagrams to correctly solve (i.e., correctly solve 2–8 anagrams, 2 anagrams, or 8 anagrams, depending on the condition to which they were randomly assigned).

The instructions were as follows: "Your Goal: [2, 8, 2–8] Anagrams. In a moment, you will be given the quiz, which is comprised of 20 anagrams. You will have 2 minutes to complete the quiz. Before you begin the quiz, please note, your goal is to solve [2, 8, 2–8] anagrams in the 2-minute period."

In this study, participants were assigned a goal (in the previous studies, goals were self set). Therefore, instead of objective challenge and attainability levels, this study includes subjective measures of challenge and attainability. After reading the instructions and receiving their assigned goals, participants rated the extent to which their assigned goal was perceived as attainable ("This goal is realistic for me" and "This goal is what I expect to get") and challenging ("This goal is challenging").

Participants then solved as many of the 20 five-letter anagrams as they could in a 2-minute period, which provided us with performance data. Next, participants answered questions about the degree to which they experienced feelings of accomplishment ("Solving the anagrams made me feel like I accomplished something today," "I am happy with my performance on the anagram activity") and goal reengagement ("I want to try to get a better score in the future").

Results

Subjective Challenge and Attainability. To the extent that consumers think about the high end of the range when considering the level of challenge in a goal, participants should perceive the high-low range goal to be more challenging than the low single number goal but not different than the high single number goal. If consumers consider the low end of the range when considering the attainability of a goal, then participants should perceive the high-low range goal to be significantly more attainable than the high single number goal but not different than the low single number goal.

We ran a one-way ANOVA to examine how the three types of assigned goals were perceived to be challenging (recall that we cannot use objective measures of attainability and challenge because the goals were assigned in this study). The overall model was significant ($F(2, 253) = 7.37$, $p < .001$). The high single number goal was perceived to be significantly more challenging than the low single number goal ($M_{N8} = 4.86$ vs. $M_{N2} = 3.78$; $t(253) = 3.80$, $p < .001$). As expected, the high single number goal and the high-low range goal were not significantly different in perceived challenge ($t(253) = 1.53$, NS), presumably because consumers think about the high end of the range when they consider the challenge aspect of a high-low range goal. Furthermore, the low single number goal was perceived to be significantly less challenging than the high-low range goal ($M_{N2} = 3.78$ vs. $M_{R2,8} = 4.44$; $t(253) = 2.43$, $p < .05$).

We next ran a one-way ANOVA to examine how the goals were perceived in terms of attainability. The overall model was significant ($F(2, 253) = 4.71$, $p < .01$). Participants perceived the high single number goal ($M_{N8} = 4.78$) to be significantly less attainable than the high-low range

goal ($M_{R2,8}$ = 5.44; $t(253)$ = 3.00, p < .005) and the low single number goal (M_{N2} = 5.26; $t(253)$ = 2.12, p < .05). The high-low range goal and low single number goal were not significantly different in attainability ($t(253)$ = .81, NS), as expected.

Feelings of Accomplishment. We ran an ANCOVA on feelings of accomplishment, with goal type as the independent variable and performance (score) included as the covariate. The overall model was significant ($F(2, 252)$ = 8.44, p < .001). As expected, participants felt a greater sense of accomplishment after pursuing the high-low range goal than either the high single number goal ($M_{R2,8}$ = 3.81 vs. M_{N8} = 3.03; $t(252)$ = −4.09, p < .001), or the low single number goal ($M_{R2,8}$ = 3.81 vs. M_{N2} = 3.38; $t(252)$ = −2.24, p < .05). Also, participants showed no difference in feelings of accomplishment when they had either a low single number or a high single number goal ($t(252)$ = 1.54, p > .12), as expected. In addition, performance was a significant covariate in the model ($F(2, 252)$ = 49.26, p < .001).

Goal Reengagement. We ran an ANCOVA on goal reengagement, with goal type as the independent variable and performance (score) included as the covariate. The overall model was significant ($F(2, 252)$ = 5.52, p < .005). The analysis revealed that participants expressed a greater interest in goal reengagement in the high-low range condition ($M_{R2,8}$ = 4.71) than in either the high single number condition (M_{N8} = 4.08; $t(252)$ = −3.09, p < .005) or the low single number condition (M_{N2} = 4.15; $t(252)$ = 2.51, p < .05), which supports our main prediction. As expected, interest in goal reengagement was not significantly different across the low single number goal and high single number goal conditions (p > .57, NS). In addition, performance was a significant covariate in the model ($F(2, 252)$ = 27.70, p < .001). In this study, there was no significant difference in performance (total puzzles solved) across the three conditions (M_R = 3.77 vs. M_{LN} = 3.92 vs. M_{HN} = 4.16; F < 1).

Mediational Testing of the Full Conceptual Model. To further test the underlying process in our conceptual framework, we ran two mediation models (Preacher, Rucker, and Hayes 2007, Process Model 6). Our conceptual framework proposes that a high-low range goal will be (*a*) as attainable as a low single number goal, but more challenging, and (*b*) as challenging as a high single number goal, but more attainable. Thus, when a high-low range goal and a low single number goal are included in a model, the relationship between goal type and goal reengagement should be mediated by challenge and feelings of accomplishment. When a high-low range goal and a high single number goal are included in the model, the relationship between goal type and goal reengagement should be mediated by attainability and feelings of accomplishment.

The first mediation model examines the relationship between low single number goals and high-low range goals. In this model, we would expect an indirect effect via perceived challenge and feelings of accomplishment on goal

reengagement, because these goals are equal on attainability and differ only on challenge. The second model examines the relationship between high single number goals and high-low range goals. This model tests whether there is an indirect effect via perceived attainability and feelings of accomplishment on goal reengagement, because these goals are equal on challenge and differ only on attainability.

In the first model, the independent variable was goal type (low single number vs. high-low range goals), the first mediator was perceived challenge and the first mediator led to the second mediator, feelings of accomplishment. The dependent variable was goal reengagement and the control variable was performance (score). Bootstrapping analysis with 5,000 resamples excluded zero for the proposed indirect path from goal type first through perceived challenge then through feelings of accomplishment to interest in goal reengagement (effect = .0111, 95% confidence interval: .0006 to .0496), thus supporting our model.

In the second mediation model, the independent variable was goal type (high single number vs. high-low range goals), the first mediator was perceived attainability and the first mediator led to the second mediator, feelings of accomplishment. The dependent variable was goal reengagement and the control variable was performance (score). Bootstrapping analysis with 5,000 resamples excluded zero for the proposed indirect path from goal type first through perceived attainability then through feelings of accomplishment to interest in goal reengagement (effect = .0885, 95% confidence interval: .0314 to .1988), thus further supporting our model.

Goal to Performance Outcome Analysis. Recall that in study 3A we analyzed the amount by which participants succeeded (i.e., goal-to-performance outcomes). We did this to understand whether the amount by which participants beat (or missed) their goals could help explain differences in goal reengagement. We next report our analysis of this issue in study 3B.

Participants in the low single number condition and the high-low range condition did not significantly differ in the amount by which they exceeded their goal (i.e., their goal-to-performance outcomes; M_R = 1.77 vs. M_{LN} = 1.92; $t(253)$ = .35, p > .72). This finding suggests that factors beyond goal-to-performance outcomes are needed to explain differences in goal reengagement between these conditions. In addition, the goal-to-performance outcome difference for participants in the high number condition (M_{HN} = −3.84) was significantly lower than both the high-low range (M_R = 1.77; $t(253)$ = 13.36, p < .001) and low number conditions (M_{LN} = 1.92; $t(253)$ = 13.20, p < .001). This is consistent with the fact that the high single number goal was (subjectively and objectively) less attainable than both the high-low range and the low single number goals.

Discussion

The findings from study 3B provide additional support for our model, which suggests that goal specificity influences

the interest in goal reengagement due to a combination of challenge and attainability. Thus, even if a single number goal is just as attainable (but not as challenging) or just as challenging (but not as attainable) as the high-low range goal, the high-low range goal still results in greater feelings of accomplishment and interest in goal reengagement.

Furthermore, we mentioned earlier in the paper that an alternative explanation for our results is that they are driven by perceived progress toward the goal. This explanation would be plausible if consumers perceived that they had made greater progress with a range goal than a number goal. However, we found in studies 3A and 3B that the amount by which respondents succeeded in beating their goals (an indirect measure of progress) could not explain differences in goal reengagement, since these amounts were similar across the two types of goals that were set. Thus, this measure suggests that progress toward a goal may not be the best explanation for our findings.

However, in order to provide more evidence that progress toward a goal may not be the best explanation for our findings, we wanted to offer a more direct test. Thus, we ran a short study on perceptions of progress across range and single number goals. This was a 2 (goal type: high-low range, single number) × 2 (score: lower, higher), between-subjects experiment. Participants were 97 adults from MTurk. Participants read the following statement according to their randomly assigned condition: "Imagine you are trying to save [between $50 and $100/$75]. As of today you have saved [$70/$80]." Thus, we manipulated the goal type (high-low range or single number) and the amount actually saved (lower or higher). After reading the statement, respondents answered the question: "How much progress have you made toward your goal?" (1 = very little, 7 = very much). An ANOVA model revealed main effects of goal type (M_R = 5.63 vs. M_N = 6.69; $F(1, 93)$ = 35.73, $p <$ .001) and progress level (M_{70} = 5.94 vs. M_{80} = 6.38; $F(1, 93)$ = 6.16, $p < .05$); the interaction was not significant ($F < 1$). These results show that perceptions of progress are actually greater for single number goals than range goals (across different amounts saved). This runs counter to the alternative explanation that our proposed process may in fact be due to greater perceived progress in the range than the single number goals, since consumers did not in fact perceive this and actually perceived the opposite.

STUDY 4

Our studies thus far have shown that feelings of accomplishment likely serve as the mediator between the type of goal that is set and the interest in goal reengagement. However, in order to provide more confidence in this explanation, we wanted to examine a situation where consumers would set different types of goals, but where feelings of accomplishment should not be influenced. In particular, consumers may set goals for games of luck, such as how much they hope to win during a gamble, and feelings of accomplishment should not be influenced by the outcome, since this is simply a game of chance.

Thus, the purpose of the present study was to further examine the effects of feelings of accomplishment on the interest in goal reengagement. The tasks used in prior studies have required consumers to use their skill to accomplish a variety of goal tasks. Using one's skill to pursue a challenging, yet attainable goal can lead to feelings of accomplishment (Chantal and Vallerand 1996). However, if the goal pursuit does not require skill but is purely based on luck, consumers may not experience such feelings of accomplishment (Frieze and Snyder 1980). Therefore, in the present study, we manipulate whether a goal requires skill or luck and predict that our prior result, that type of goal influences interest in goal reengagement, will only occur for tasks where feelings of accomplishment are affected (games of skill) but not when feelings of accomplishment are not affected (games of luck).

Participants and Procedure

The study was a 2 (goal: single number, high-low range) × 2 (task basis: skill, luck) between-subjects experiment. Participants were 64 undergraduate business students at the University of Kentucky participating in exchange for course credit. When participants entered the laboratory, they were informed that they would play a game called "Find the Ace" in which they would find the ace card among a set of five playing cards (Cann and Pearce 1980). The task was described as either a game of skill or a game of luck. Participants were asked to set a goal (single number or high-low range) for the number of times they would correctly find the ace card in 10 rounds played. After setting a goal, participants individually played the game with an administrator. The task itself was manipulated as either skill- or luck-based by how the cards were shuffled. For the game of skill, cards were shuffled in front of the participant, and participants would try to follow the focal ace card while it was being shuffled. For the game of luck, cards were shuffled behind the administrator's back, then the deck of five cards was spread out in front of the participant, so finding the ace would be luck. Every participant was given 10 opportunities to try to find the ace card. After playing the game, participants responded to questions about feelings of accomplishment ("This game gave me a feeling of accomplishment," "Playing this game made me feel successful," and "I am happy with my performance on the game") and goal reengagement ("I am motivated to play this game again," "I would like to play this game again sometime," and "I would like to play a game like this again in the future"), using a 7-point dis/agree scale. Participants also answered a manipulation check, "This task was mostly influenced by: (1 = skill, 7 = luck)." The administrator recorded the participant's score, which we used as the performance level.

Results

Manipulation Check. Those who were in the skill conditions felt that the game involved more skill than those in

the luck conditions ($M_{\text{SKILL}} = 1.62$ vs. $M_{\text{LUCK}} = 6.70$; $F(1, 60) = 508.87$, $p < .001$).

Objective Challenge and Attainability. Participants in the skill conditions set range goals of between $M_{\text{LR}} = 4.23$ and $M_{\text{HR}} = 7.85$, and single number goals of $M_{\text{N}} = 6.13$. The low end of the range goal was significantly more attainable than the single number goal ($M_{\text{LR}} = 4.23$ vs. $M_{\text{N}} = 6.13$; $F(1, 60) = 4.98$, $p < .05$), and the high end of the range goal was significantly more challenging than the single number goal ($M_{\text{HR}} = 7.85$ vs. $M_{\text{N}} = 6.13$; $F(1, 60) = 4.02$, $p < .05$).

Participants in the luck conditions set a high-low range goal of between $M_{\text{LR}} = 3.16$ and $M_{\text{HR}} = 6.16$, and a single number goal of $M_{\text{N}} = 3.31$. In the luck conditions, the low end of the range goal and the single number goal were not different in terms of attainability ($M_{\text{LR}} = 3.16$ vs. $M_{\text{N}} = 3.31$; $F < 1$). The high end of the range goal was significantly more challenging than the single number goal ($M_{\text{HR}} = 6.16$ vs. $M_{\text{N}} = 3.31$; $F(1, 60) = 13.29$, $p < .001$).

In addition, we found that there was a main effect of skill vs. luck on objective challenge for both range ($M_{\text{HR-LUCK}} = 6.16$ vs. $M_{\text{HR-SKILL}} = 7.85$; $F(1, 60) = 4.16$, $p < .05$) and number ($M_{\text{N-LUCK}} = 3.31$ vs. $M_{\text{N-SKILL}} = 6.13$; $F(1, 60) = 12.25$, $p < .001$) goals. This suggests that respondents who are involved with games of skill set more challenging goals that those involved with games of luck, which is consistent with prior research (Niemivirta 1999; Williams, Donovan, and Dodge 2000). However, as shown below, these different types of games do have different effects on feelings of accomplishment, and interest in goal reengagment, as we predicted.

Feelings of Accomplishment. We ran an ANCOVA of feelings of accomplishment (Cronbach $\alpha = .90$) with goal type and task basis as independent variables and performance as the covariate. We found a significant goal type by task basis interaction ($F(1, 59) = 4.87$, $p < .05$; see fig. 2A). The goal type ($F(1, 59) = 1.12$, $p > .29$) and task basis ($F(1, 59) = 1.36$, $p > .24$) main effects were not significant. Planned contrasts reveal that when the goal task was skill based, feelings of accomplishment were greater for high-low range goals than for single number goals ($M_{\text{R}} = 6.10$ vs. $M_{\text{N}} = 4.42$; $F(1, 59) = 4.83$, $p < .05$). When the goal task was luck based, there was no difference in feelings of accomplishment ($M_{\text{R}} = 2.98$ vs. $M_{\text{N}} = 3.38$; $F < 1$). Performance was a significant covariate in the model ($F(1, 59) = 13.82$, $p < .001$).

Goal Reengagement. We ran an ANCOVA model of interest in goal reengagement (Cronbach $\alpha = .89$) with goal type and task basis as independent variables and performance as the covariate. We found a marginal goal type by task basis interaction ($F(1, 59) = 3.02$, $p < .10$; see fig. 2B). The goal type ($F(1, 59) = 2.23$, $p > .14$) and task basis ($F < 1$) main effects were not significant. Planned contrasts reveal that when the goal task was skill based, interest in goal reengagement was greater for high-low range goals than for single number goals ($M_{\text{R}} = 5.03$ vs. $M_{\text{N}} = 3.52$; $F(1,$

FIGURE 2

(*A*) STUDY 4: FEELINGS OF ACCOMPLISHMENT AS A FUNCTION OF GOAL SPECIFICITY AND GOAL BASIS (LUCK VS. SKILL); (*B*) STUDY 4: INTEREST IN GOAL REENGAGEMENT AS A FUNCTION OF GOAL SPECIFICITY AND GOAL BASIS (LUCK VS. SKILL)
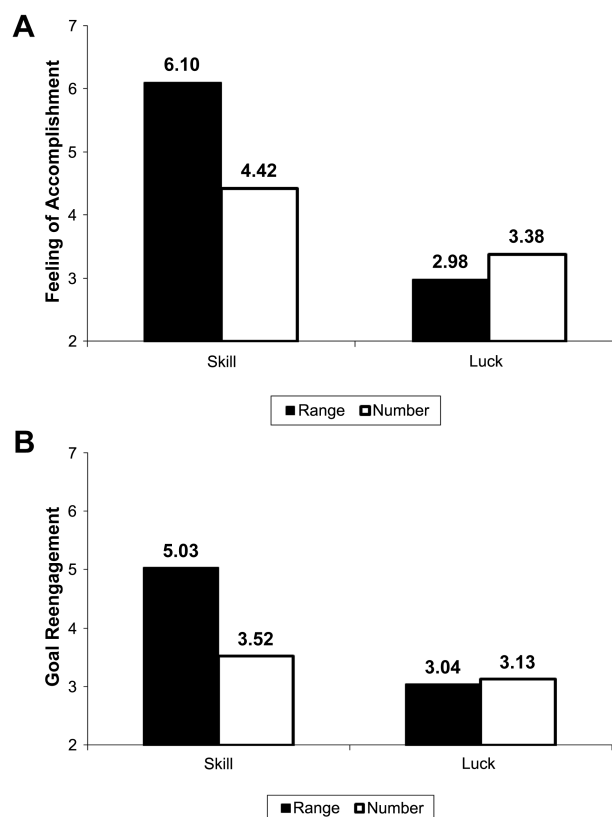
$59) = 4.72$, $p < .05$). When the goal task was luck based, there was no difference in interest in goal reengagement ($M_{\text{R}} = 3.04$ vs. $M_{\text{N}} = 3.13$; $F < 1$).

Performance. An ANOVA model of participants' scores revealed only a main effect of task basis ($F(1, 60) = 323.76$, $p < .001$), with performance significantly higher in the skill-based task ($M_{\text{SKILL}} = 8.78$ vs. $M_{\text{LUCK}} = 2.31$). The other effects were not significant (all $F < 1$). Planned contrasts revealed that in both the skill and the luck conditions, performance levels were not significantly different across goal type: skill conditions ($M_{\text{R}} = 9.15$ vs. $M_{\text{N}} = 8.40$; $F(1, 60) = 1.85$, $p > .17$) and luck conditions ($M_{\text{R}} = 2.21$ vs. $M_{\text{N}} = 2.40$; $F < 1$), as expected.

Discussion

Study 4 introduced an important boundary condition on the effect of high-low range goals versus single number goals on the interest in goal reengagement: whether the goal

requires skill or luck. Our conceptual framework argues that our effects are due to feelings of accomplishment, which we found to be more relevant to games of skill than games of luck, and thus goal type only influenced the interest in goal reengagment for games of skill, as they were more likely to invoke feelings of accomplishment.

STUDY 5

We have assumed in all of our prior studies that different kinds of goals provide different reference points, which then influence challenge, attainability, accomplishment, and goal reengagement. However, it might be possible that our results are not in fact due to the different kinds of reference points that are provided through goals but, instead, to any, even irrelevant, reference points. For example, a consumer can set a goal to eat between 2 and 8 pieces of candy, or the consumer may see some irrelevant portrayal of these reference points, such as whether one kind of candy comes in 2 flavors and one comes in 8 flavors. We believe that our framework only applies to goals that consumers actually set, and not to irrelevant reference points. We test this idea in the next study.

Study 5 was a 2 (specificity: single number vs. high-low range) × 2 (information type: goal, irrelevant reference point) between-subjects experiment. Participants were 132 paid MTurk participants (these were different participants from the same adult population used in study 3A). We asked participants to solve anagrams as in study 3B. We manipulated information type by either assigning participants to a goal for the number of anagrams to solve (6 anagrams vs. 4–8 anagrams), or providing irrelevant information about the number of cars owned in the lifetime of past participants (6 cars vs. 4–8 cars). Thus, in the goal conditions, participants were assigned a goal. In the irrelevant reference point conditions, there was no discussion of a goal. We randomly assigned participants to one of the four conditions, and they read the following:

> **Goal Conditions:** In a moment, you will be given a list of anagrams to solve. After you complete the anagrams, we will ask you a few questions. Your goal is to correctly solve [6, 4–8] anagrams.
>
> **Irrelevant Information Conditions:** In a moment, you will be given a list of anagrams to solve. After you complete the anagrams, we will ask you a few questions. Among those questions, we will ask you to list all the cars you have owned. Past participants have owned on average [6, 4–8] cars in their lifetime.

Next participants solved the anagrams. After completing the anagrams, we asked participants about their feelings of accomplishment ("Solving the anagrams made me feel like I accomplished something today," and "Solving the anagrams made me feel successful") and their interest in reengagement ("I want to try to get a better score in the future," "I would like to solve puzzles like this again," and "I am

motivated to solve another set of anagrams") all on 7-point "strongly disagree/strongly agree" scales.

Results

Feelings of Accomplishment. We ran a 2 × 2 ANCOVA on the feelings of accomplishment index (Cronbach α = .87), with performance (number of anagrams solved) as the covariate. Results revealed a main effect of information type (M_{GOAL} = 3.47 vs. M_{IRR} = 2.68; $F(1, 127)$ = 9.17, $p <$ .005), qualified by its marginal interaction with specificity ($F(1, 127)$ = 3.40, $p < .07$). The specificity main effect was nonsignificant ($F(1, 127)$ = 1.88, $p = .17$). Contrasts revealed that when consumers set a goal, the range goal led to greater feelings of accomplishment than the single number goal (M_R = 3.89 vs. M_N = 3.05; $F(1, 127)$ = 5.24, $p <$ .05). There was no difference in feelings of accomplishment when irrelevant information was provided (M_R = 2.62 vs. M_N = 2.74; $F < 1$). In addition, performance was a significant covariate in the model ($F(1, 127)$ = 26.97, $p <$ .001).

Goal Reengagement. We ran a 2 × 2 ANCOVA of the goal reengagement index (Cronbach α = .70) and included performance (number of anagrams solved) as the covariate. Results revealed a main effect of information type (M_{GOAL} = 5.15 vs. M_{IRR} = 4.61; $F(1, 127)$ = 10.37, $p < .005$). The specificity main effect ($F(1, 127)$ = 2.21, $p = .14$) and the interaction ($F(1, 127)$ = 1.76, $p = .19$) were nonsignificant. Contrasts revealed that when consumers set a goal, the range goal led to greater interest in goal reengagement than the single number goal (M_R = 5.39 vs. M_N = 4.91; $F(1, 127)$ = 4.01, $p < .05$). There was no difference in goal reengagement when irrelevant information was provided (M_R = 4.62 vs. M_N = 4.59; $F < 1$). In addition, performance was a significant covariate in the model ($F(1, 127)$ = 26.90, $p < .001$).

Discussion

This study demonstrates that goal specificity functions in a manner distinct from other anchor points such as irrelevant anchors. Goals are more motivating than tasks that do not involve a goal and that provide irrelevant anchors. A key difference between goals and irrelevant anchors is the role of feelings of accomplishment. When consumers have a goal, feelings of accomplishment influence the relationship between having a goal and interest in goal reengagement. However, when consumers are presented with irrelevant anchors, the influence of feelings of accomplishment on goal reengagement are no longer present.

GENERAL DISCUSSION

This research focused on the influence of the type of goal that was set on the interest in goal reengagement. We did this by varying whether consumers set a single number goal or a high-low range goal. We suggested that high-low range

goals, with their two reference point structure, can lead to greater interest in goal reengagement compared to a single number goal, which only offers one salient reference point. In particular, the high end of the range goal may serve to increase the perceived challenge of the task, while the low end of the range goal may serve to increase the attainability of the task. We found that the single number goal, on the other hand, may be perceived as a compromise between these two purposes and, as a result, is seen as both less challenging and less attainable. Thus, the high-low range goal can offer "the best of both worlds" compared to the single number goal.

The results of our studies provide support for the idea that, in order for a particular type of goal to lead to increased goal reengagement, it should have both greater attainability and greater challenge than a different goal. We found that consumers set the two ends of the high-low range goal in a different manner than the single number goal, reflecting the different purposes of the high and low ends of the range. This suggests that the single number goal represents a compromise between the greater attainability and challenge of the high-low range goal. Furthermore, we found that interest in goal reengagement was driven by feelings of accomplishment. While beating an easy single number goal can lead to success, it may not lead to a feeling of accomplishment if it is not very challenging (studies 3A and 3B). Thus, challenge appears to be an essential aspect of goal reengagement. Similarly, a very difficult single number goal can be perceived as challenging, but due to a lack of attainability, consumers might not be interested in reengaging such a goal. In addition, study 1 was able to show that our theorizing was supported in a field study involving actual consumer decisions. The results from study 4 provide an important boundary condition for the effects of the high-low range goal versus the single number goal on goal reengagement: the goal itself must require some level of skill for the high-low range goal to be seen as both relatively challenging and attainable. The results from study 5 show that the high-low range information associated with the task should be related to a goal in order to influence goal reengagement. Irrelevant anchor points do not have the same positive effect on goal reengagement.

One contribution of this research is showing that goal specificity has a systematic effect on goal reengagement, as such a topic has not received much attention yet. Rather, prior work on goal specificity, including work on high-low range and single number goals, has tended to focus on performance and has found an ambiguous relationship between goal specificity and performance (Klein et al. 1990; Locke et al. 1989). We found that, since performance did not vary across single number and high-low range goals in our studies, past performance may not be the best explanation for our results. Rather, perceptions of attainability, challenge, and accomplishment, driven by key reference points, may be a better explanation.

We also note that, while important prior research has shown that the desire to continue to pursue a goal is often driven by the perceived progress toward the goal (e.g., Drèze and Nunes 2011), this prior research has not looked as much at the role of the challenge of the task nor at feelings of accomplishment. In particular, Drèze and Nunes (2011, 280), note that "this research [on perceived progress] is not without its limitations. We suggest that goals or reward levels should be challenging enough to foster self-learning, but the precise level of difficulty will vary across situations. . . . We also did not examine the impact of success on people's emotional response, such as the feelings of satisfaction and pleasure it should elicit." Thus, in our paper, we tried to address this limitation of prior research by looking at what variables (specificity of the goal) influenced challenge (and attainability), and we also provided evidence that certain responses (feelings of accomplishment) drive our effects.

Another contribution of this research is that it helps to explain the underlying process for how consumers assign goals as reference points. Building on the concept of goals as reference points (Heath et al. 1999), our studies provide insight into how reference points are perceived and used as goal structure is varied. We find that a high-low range goal provides for different reference points to be used when evaluating attainability and challenge. We also find that subjective perceptions of goal challenge and attainability are consistent with our measures of objective challenge and attainability, providing further evidence that consumers may consider the low end of the high-low range goal when considering attainability, and the high end of the high-low range goal when considering challenge.

Our main finding is consistent with research showing that the motivation to continue pursuing a goal is sometimes greater when people focus on what they have accomplished and sometimes on what they still need to accomplish (Koo and Fishbach 2008) because the high-low range goal is able to potentially achieve both of these objectives. The low end of the high-low range goal can serve as a reference point for what has been accomplished and the high end of the high-low range goal can serve as a reference point for what still needs to be accomplished.

Our findings have implications for both marketing managers and for public policy. In some of our studies, consumers played games (study 5) or solved anagram puzzles (studies 3B and 4). Consumers spend significant amounts of time and money on gaming, whether gambling at casinos, playing video games on their mobile phones, or completing Sudoku puzzles. For example, teenage boys who play video games spend an average of 58 minutes per weekday on gaming (Cummings and Vandewater 2007). In fact, there are many aspects of consumers' lives that involve goal setting as entertainment. For example, many video games are designed such that the consumer can experience a range of success. In particular, in Super Mario Galaxy 2, if a consumer passes a minimum level, this consumer can earn one star and continue on to the next level. However, the consumer can also stay at the current level and try again for two or three stars. While in this system the consumer may not set an explicit goal, the structure of the game may serve

to set a goal and thus have similar effects on the interest to reengage with the game—for example, a consumer earning one star may be happy with having attained that particular level, but still be challenged to try for three stars. The result of this could be more interest in continuing to play the game and potentially increased overall satisfaction with the product.

Consumers spend a significant amount of money on products and services to facilitate the pursuit and attainment of goals that require effort over time, and for which goal reengagement is an important issue. For instance, in 2007, Americans spent $58 billion on weight loss products and cures (Delaney and Scherzer 2010). Products and services designed to help consumers make sustained lifestyle changes such as exercise equipment, gym memberships, and financial instruments are widespread. Sustained motivation to stick with a program can also translate to a sustained relationship with a consumer over the long term. Hence, these types of offerings may benefit from providing solutions that are both attainable and challenging.

Our research also suggests that dieters, or consumers pursuing health-related goals, may benefit from pursuing less specific high-low range goals over the duration of a weight loss program. From a public policy standpoint, for government and advocacy agencies developing programs to help consumers make sustained lifestyle changes that improve health and well-being (such as sustained exercise and dietary changes for diabetics), we suggest that the programs incorporate high-low range goals that are both attainable and challenging, to help increase motivation over the long term. For example, most weight loss programs recommend that it is healthier for consumers to make a sustained lifestyle change (vs. pursuing a crash diet for a short amount of time). As we saw in study 1, participants in a weight loss program may benefit over the long term by developing their weekly weight loss goals in the form of a high-low range, rather than as a single number. These participants were more motivated to stick with the program over the long term, as we saw in their reenrollment rates.

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