Work-to-Unlock Rewards: Leveraging Goals in Reward Systems to Increase Consumer Persistence

MARISSA A. SHARIF ⓘD
KAITLIN WOOLLEY ⓘD

Eight studies ($N = 5{,}025$) demonstrate that consumers persist more when they must complete a target number of goal-related actions before receiving continuous rewards (i.e., what we term work-to-unlock rewards) than when they receive continuous rewards for their effort right away (i.e., what we term work-to-receive rewards). The authors suggest that the motivating power of work-to-unlock rewards arises because these rewards (1) naturally encourage consumers to set an attainable goal to start earning rewards, motivating consumers initially through goal setting and (2) keep consumers engaged after reaching this goal due to low perceived progress in earning rewards. A work-to-unlock reward structure increases persistence relative to standard continuous rewards across a variety of consumer-relevant domains (e.g., exercising, flossing, evaluating products), and even when work-to-unlock rewards offer rewards of a lower magnitude. Further, a work-to-unlock reward structure outperforms other reward structures that encourage goal setting. Lastly, the authors identify a theoretically consistent boundary condition of this effect: the length of the unlocking period.

Keywords: rewards, goals, motivation, persistence, health, tiered

Consumers constantly struggle to achieve their long-term goals, such as becoming healthier, learning a new language, or saving for retirement. To achieve these long-term goals, consumers need to pursue a series of short-term goals, such as working out or eating healthily in a given week. To help motivate themselves, consumers often rely on products and services provided by companies. For example, there are 87 million consumers who use a health or fitness app to help motivate them to work out or eat healthily, with one in five Americans holding a health club membership ([IHRSA Report 2019](#)).

Consumers' experience of working toward their goals is often costly in the present, with delayed benefits. Consumers need to eat healthily and exercise for many weeks before losing weight, and they need to repeatedly study potentially boring vocabulary cards daily before becoming more fluent in a new language. As a result, companies offering products and services to help consumers reach these goals need to find ways to motivate consumers so that they adhere to their program and make progress. One common way to motivate consumers is to offer small rewards for each completed goal-related action ([Charness and Gneezy 2009](#); [John et al. 2011](#); [Volpp et al. 2008](#)). For example, a gym or personal trainer could provide consumers five points or a $0.25 membership discount each time they work out. Such an incentive structure is referred to as

"piecemeal" or "continuous" rewards (Beshears et al. 2021; Zhang and Gao 2016).

We examine *when* companies should start offering continuous rewards for engaging in goal-related behaviors to help motivate consumers' goal pursuit. In particular, we ask whether it is more motivating for consumers to start receiving continuous rewards immediately, after the first goal-related activity they complete, or after a slight delay, after they complete a few goal-related activities. For example, companies such as CrossFit could offer continuous rewards every time consumers complete a workout class, starting from the first class they attend. Alternatively, consumers could start receiving continuous rewards for exercising if and when they complete at least three workouts, at which point they will be rewarded for every subsequent workout. Which of these strategies will be more motivating over time?

We propose and find that consumers persist more in goal-related activities when they need to "work-to-unlock" rewards—that is, when they receive continuous rewards only after first completing a few unrewarded goal-related actions compared to "work-to-receive" rewards—that is, when they receive continuous rewards after the first goal-related action is completed. We uncover two key features of work-to-unlock rewards that contribute to the motivating power of this reward structure. First, we suggest that work-to-unlock rewards naturally encourage consumers to set an attainable goal to start earning rewards, leading them to be more motivated *initially* to reach that goal (Locke and Latham 1990). Second, unlike mere goal setting in which people detach from the goal after achieving it (Amir and Ariely 2008; Fishbach, Dhar, and Zhang 2006; Heath, Larrick, and Wu 1999), we suggest that consumers with work-to-unlock rewards persist after reaching their goal to "unlock the reward" due to low progress (i.e., perceived lack of accomplishment) toward earning rewards.

The main contribution of this work is to uncover a novel means to motivate consumers to complete goal-related activities—activities consumers know they should do, but may not want to do. Thus, this work has implications for companies creating incentive programs to motivate consumers to complete important goal behaviors. We further advance the literatures on rewards (Beshears et al. 2021; Charness and Gneezy 2009; Gershon, Cryder, and John 2020; John et al. 2011; Kivetz, Urminsky, and Zheng 2006; Volpp et al. 2008) and motivation (Amir and Ariely 2008; Heath et al. 1999; Huang, Jin, and Zhang 2017; Sharif and Shu 2017, 2021), revealing a novel way to harness the motivational power of continuous rewards. We demonstrate that consumers are more motivated across a series of tasks (i.e., dental flossing, working out, shopping, typing tasks, defining vocabulary words) with work-to-unlock rewards than with work-to-receive rewards, even when a work-to-unlock reward structure offers a *smaller* reward amount per task. In doing so, we reveal how reward structures can leverage goal setting to increase persistence, often at a lower monetary cost. From a marketing perspective, this research offers substantive implications by increasing consumer adherence to programs that offer work-to-unlock rewards, without requiring increased expenditure and without reducing consumers' interest in signing up for the reward program.

MOTIVATION FROM REWARDS AND GOALS

Rewards increase effort expenditure (Niv et al. 2006) and completion of goal-related actions ranging from improving health to persisting in work tasks (Acland and Levy 2015; Charness and Gneezy 2009; John et al. 2011; Volpp et al. 2008). Typically, the closer consumers are to receiving a reward, the more motivated they are (Kivetz et al. 2006). Research has uncovered a variety of factors that influence the effectiveness of rewards (DellaVigna and Pope 2018; Shen, Fishbach, and Hsee 2015), such as how rewards interact with social or intrinsic motivation (Gneezy, Meier, and Rey-Biel 2011; Woolley and Sharif 2021), as well as who the recipient of the reward is (i.e., the self vs. a friend; Gershon et al. 2020).

In this research, we propose a novel means to increase motivation from continuous rewards, which can help people persist longer in goal-related actions over time. In particular, we propose that continuous rewards can be more motivating if consumers must first complete a target number of goal-related actions before receiving them (i.e., working to "unlock" them). We contrast that to standard continuous rewards (what we term "work-to-receive" rewards) in which consumers start receiving rewards after the first goal-related action they complete.

Work-to-unlock rewards inherently delay reward onset relative to work-to-receive rewards. On the surface, arguing that delayed rewards will *increase* motivation may appear at odds with research on discounting. This prior research found that people discount the value of delayed rewards (Urminsky and Zauberman 2016). For this reason, people are impatient, preferring a smaller reward sooner (i.e., $1 today) than a larger reward later (i.e., $2 tomorrow) (Loewenstein 1988; Loewenstein and Prelec 1992). Not only do people prefer immediate (vs. delayed) rewards), but in one-shot decisions, immediate rewards (e.g., positive taste of vegetable consumption) better predict motivation than delayed rewards (i.e., importance of eating healthy food for long-term goals; Woolley and Fishbach 2017). However, this prior research has primarily explored the benefits of immediate (vs. delayed) rewards for one-shot decisions, or initially within goal pursuit, and has neglected the dynamic effect of such rewards on persistence in short-term goals over time. We suggest that with repeated experiences over time, the delayed onset of

rewards inherent in a work-to-unlock reward structure can increase persistence relative to rewards that arrive immediately, namely work-to-receive rewards.

Work-to-Unlock Rewards and Tiered Rewards

Initial support for the motivating value of work-to-unlock rewards comes from research on tiered loyalty programs, some of which have components of work-to-unlock reward structures. In tiered reward programs, consumers are often segregated into specific classes (tiers) based on their level of spending. Consumers in higher tiers receive both greater hard benefits (i.e., rewards) and intangible/soft benefits (e.g., "status" and recognition; Brady 2000; Dreze and Nunes 2009; Gwinner, Gremler, and Bitner 1998), and this higher level of preferential treatment can increase future purchases (Lacey, Suh, and Morgan 2007). Tangible rewards for a given tier vary, with members often receiving different types of rewards simultaneously. For example, American Airlines' tiered loyalty program gives members complimentary upgrades on tickets, free checked bags, priority check-in, waitlist priority, and more upon entering a higher tier. High-tier customers also receive a mileage bonus (e.g., 40% more bonus miles per base flight mile), which increases (e.g., to 60%) when moving up tiers; this change in reward multiplier is a feature similar to work-to-unlock rewards.

Whereas higher tiers grant greater tangible benefits, they also grant greater intangible benefits (e.g., status). For example, upon entering a higher tier, American Airlines labels customers as "Gold," "Platinum," and beyond. Research on tiered loyalty programs has primarily focused on the beneficial impact of these "status" benefits. For example, consumers are more committed to a brand if they identity with the tiered reward levels (e.g., being a "gold member"; McCall and Voorhees 2010). Higher tiered customers often compare themselves with lower tiered customers, leading them to feel special, important, and appreciated (Bolton, Kannan, and Bramlett 2000; Lewis 2004) as well as superior to members in lower tiers (Dreze and Nunes 2009). Indeed, customers often select into loyalty programs that they feel will provide them a relative advantage (Kivetz and Simonson 2003).

We specifically focus on a reward structure, work-to-unlock rewards, which bears a similarity to one type of reward offered within some tiered loyalty programs. Doing so enables us to pinpoint the motivational impact of work-to-unlock rewards, absent other hard rewards (e.g., priority check-in), elite status, or social comparison.

Persistence With Work-to-Receive Rewards

To understand how work-to-unlock rewards affect motivation, we compare them with work-to-receive rewards. Work-to-receive rewards serve as our main comparison

group as the only differing feature is the delayed onset of rewards. We suggest the motivational value of work-to-unlock rewards stems from a different decision process during goal pursuit than work-to-receive rewards. Let us first consider how work-to-receive rewards dynamically affect motivation over time.

Consumers' decision to persist in a behavior is a function of the value of the task itself (Rothman 2000; Rothman, Baldwin, Hertel, and Fuglestad 2004), such as how much consumers enjoy the task (i.e., intrinsic motivation) (Ryan and Deci 2000; Woolley and Fishbach 2017), as well as the type of reward that they receive. With work-to-receive rewards, consumers receive a reward for each goal-relevant task that they complete. With no natural salient reference point for consumers to strive towards, consumers are likely to strive to earn what they deem to be a sufficient amount of rewards (Locke and Latham 1990; Wallace and Etkin 2018). That is, they have a nonspecific goal to do their best. With a "do your best" goal, consumers monitor their progress and switch to a different task when they feel that they have made sufficient progress, and feel a sense of accomplishment, on the currently active goal (Fishbach, Dhar, and Zhang 2006).

Overall, we thus expect that consumers' persistence with work-to-receive rewards is determined by (1) the value of the task itself and (2) perceived progress in earning sufficient rewards. If the task is no longer valued, or consumers feel they have sufficiently progressed in earning their rewards, they are likely to quit the task.

Phase 1: Motivation to "Unlock" Rewards With Work-to-Unlock Rewards

Work-to-unlock rewards differ from work-to-receive rewards in two ways: (1) there is a natural salient reference point in the reward structure which encourages specific goal setting initially, and (2) there is a delay in the onset of rewards, which delays progress in earning sufficient rewards. Thus, when pursuing a task that offers work-to-unlock rewards, we suggest that there are two different phases: the work-to-unlock phase (phase 1) and the continuous reward phase (phase 2). In phase 1, the "work-to-unlock" phase, consumers are not rewarded until completing a particular number of tasks, and in phase 2, the "continuous reward" phase, consumers have unlocked rewards and actually start to receive continuous rewards.

Within phase 1, the "work-to-unlock" phase, we propose consumers naturally adopt the goal of "unlocking" rewards. That is, if a consumer has to complete four workouts before they receive rewards, they will adopt the goal to complete at least four workouts. Reaching the point at which rewards begin to arrive serves as a salient and desirable reference point, leading consumers to adopt this specific goal (Fishbach and Ferguson 2007). Indeed, people often set goals that coincide with salient reference points,

such as round numbers (Allen, Dechow, Pope, and Wu 2017).

Of course, this reference point must be desirable to serve as a goal (Carver and Scheier 1990; Locke and Latham 1990). The appeal of moving from no reward to a reward per task (e.g., an increasing reward) is likely to lead consumers to find this reference point, and thus goal, desirable (Hsee 1996; Hsee and Leclerc 1998; Sharif and Oppenheimer 2016, 2021; Shen and Hsee 2017). Thus, we propose consumers naturally set a specific goal to unlock rewards.

Once consumers set an attainable goal in the work-to-unlock phase, they should be initially motivated to achieve this goal. A large stream of research has found that setting specific, attainable goals can motivate consumers to reach that goal (Locke and Latham 1990). For example, a consumer who sets a goal to complete four workouts is more likely to complete those four workouts than a consumer who sets a nonspecific goal. Indeed, by having an attainable goal close in sight, consumers are likely to experience increased motivation as they get closer to that goal (Kivetz et al. 2006; Nunes and Dreze 2006) and experience positive affect from making progress toward it (Carver and Scheier 1990; Heath et al. 1999). Thus, in line with work on goal setting, work-to-unlock rewards may facilitate initial motivation by leading consumers to set an attainable goal.

Phase 2: Motivation to Receive Rewards With Work-to-Unlock Rewards

In a work-to-unlock reward structure, what happens after consumers reach their goal and unlock rewards (i.e., phase 2)? Prior research might suggest that consumers will persist *less* after reaching this goal. Indeed, achieving a goal has been found to decrease subsequent motivation, leading consumers to relax, or take a break (Heath et al. 1999). If a consumer sets a goal to complete four workouts, they may rest or stop working out after achieving this goal. Thus, while setting a goal increases the odds people achieve it, it also decreases the likelihood of people persisting beyond that goal. This is because goal setting mirrors the value function of prospect theory (Kahneman and Tversky 1979) such that the motivation to surpass the goal is less than the motivation to reach the goal. The same holds true for subgoals (i.e., smaller goals that add up to a larger goal). For example, if a marathon runner sets a subgoal to reach the halfway point, they become increasingly motivated to get to the halfway point as they approach it, but decrease their effort after reaching it (Amir and Ariely 2008). Indeed, while subgoals can be motivating in helping consumers strive to reach them (Heath et al. 1999; Huang et al. 2017; Sharif and Woolley 2020), after reaching them, consumers feel a sense of achievement, or complacency, and switch to another goal (Amir and Ariely 2008; Fishbach et al. 2006).

However, a goal to "unlock rewards" is likely to operate differently than a goal to get to a certain point that has no specific reward attached to reaching it (e.g., a mere goal, like getting to the halfway point in a marathon). In particular, we suggest that unlike those with a mere goal, people will persist after reaching their goal to unlock rewards in a work-to-unlock reward structure. Our prediction is based on research on perceived progress. After unlocking rewards, we suggest that consumers will strive to earn a sufficient amount of rewards, persisting until they feel they have made sufficient progress to stop. That is, similar to with work-to-receive rewards, they will have a nonspecific goal to earn sufficient rewards. However, because these rewards necessarily have a delayed onset, consumers' progress toward earning rewards will be lower relative to with work-to-receive rewards, holding constant total tasks completed. For example, if a consumer receives $1 per workout with work-to-receive rewards, they would receive $4 after four days of workouts. However, with work-to-unlock rewards, after completing four workouts, they would not have earned any rewards yet and would instead be at the brink of being able to finally earn rewards (figure 1). Thus, those with work-to-unlock rewards will perceive less progress, and thus feel less accomplished, toward earning rewards due to the delayed onset of rewards (Amir and Ariely 2008; Fishbach and Dhar 2005; Fishbach et al. 2006), leading them to persist more.

Sunk cost fallacy also supports this prediction. Prior research has found that people are likely to continue an endeavor once an initial investment in money, effort, or time has been made (Arkes and Blumer 1985). Even endowing consumers with artificial progress (e.g., two free stamps upon enrollment in a loyalty program) can lead consumers to feel that the task is underway, increasing commit and motivation to complete the task (Nunes and Dreze 2006). By initially investing effort to unlock rewards, sunk cost may motivate consumers to persist even more when rewards finally begin to accrue. Overall, these processes suggest that consumers with work-to-unlock rewards will be motivated to "unlock the rewards" and persist afterwards until they feel they have sufficiently earned enough rewards. As a result, they will persist more overall than those with work-to-receive rewards.
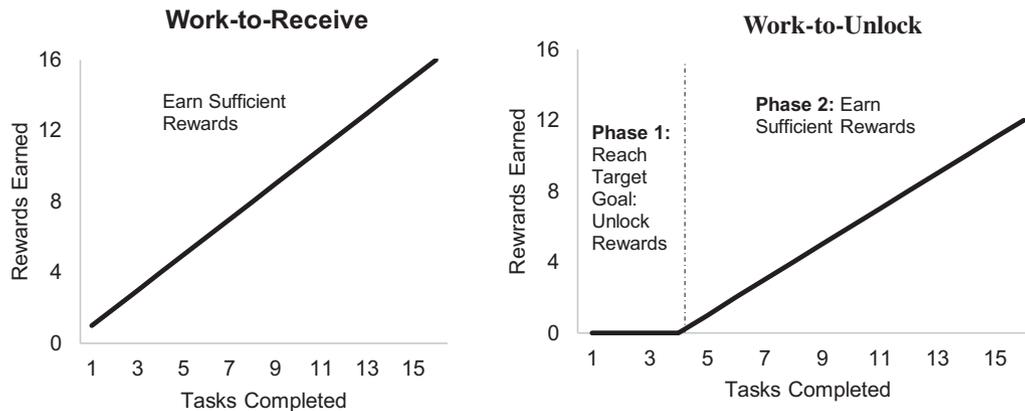
> **H1**: Consumers persist longer with work-to-unlock rewards than work-to-receive rewards.

Work-to-Unlock Rewards Versus Work-to-Receive Rewards With a Goal

We argue that work-to-unlock rewards are effective because (1) they encourage consumers to strive toward an earlier goal to "unlock the rewards," and (2) once consumers unlock rewards, lower progress in earning rewards (i.e., lack of accomplishment toward earning rewards)

FIGURE 1

DEPICTION OF WORK-TO-UNLOCK REWARD VS. WORK-TO-RECEIVE REWARD SCHEDULE

NOTE.—Consumers with Work-to-Receive rewards strive to earn sufficient rewards. Those with Work-to-Unlock rewards first strive to "unlock" their rewards in phase 1 and then strive to earn sufficient rewards in phase 2. Vertical dashed line in "work-to-unlock" figure represents threshold to unlock rewards.

encourages consumers to persist. Importantly, the dual nature of the proposed process suggests that encouraging consumers to set a mere goal *without* the experience of lower progress toward earning rewards will not lead to the same effect.

To test this proposition, we compare work-to-unlock rewards with a special instance of work-to-receive rewards—that is, work-to-receive rewards plus a mere goal. For example, consider encouraging consumers to set a goal with work-to-receive rewards (e.g., consumers receive $1 per workout and are encouraged to set a goal to workout at least four days). These consumers are likely to be motivated initially to reach the goal, similar to those with work-to-unlock rewards. However, after achieving the goal, they are unlikely to persist and will quit the task. This is because they have achieved their goal (e.g., complete four workouts) and feel they have earned sufficient rewards due to their work-to-receive reward structure. In comparison, those in the work-to-unlock condition will have achieved their goal but will not feel that they have earned sufficient rewards. This lacking sense of accomplishment toward earning rewards will motivate greater persistence among those receiving work-to-unlock rewards.

> **H2**:Consumers persist longer with work-to-unlock rewards than work-to-receive rewards with a mere goal.

Work-to-Unlock Rewards Versus Other Reward Structures With Salient Reference Points

The proposed process also suggests that work-to-unlock rewards will be more motivating than other reward structures that encourage goal setting but that also provide a

sense of progress/accomplishment in earning rewards upon reaching the goal. As one example, consider a type of quota-based sales compensation (Chung and Narayandas 2017; Jain 2012; Oyer 1998), in which salespeople need to reach a certain quota before receiving a lump sum bonus, similar to partial re-enforcement (Ferster and Skinner 1957). With this quota-based sales compensation, rather than earning continuous rewards after completing a target number of tasks, people instead receive a lump sum reward, and then face another period in which they need to complete another target number of tasks before receiving another lump sum reward (e.g., sell 10 products to receive a $100 bonus, and then sell another 10 products to receive another $100 bonus). As we examine how such a reward structure affects goal pursuit (rather than sales force compensation), we term this "goal-based lump sum rewards." Recent field experiments have found that goal-based lump sum rewards lead to better sales performance relative to *no bonus at all* or relative to a bonus *independent* of performance (Chung and Narayandas 2017).

Similar to consumers who are encouraged to set a goal with work-to-receive rewards, we suggest a goal-based lump sum reward structure will motivate consumers to get to an earlier reference point to achieve the goal but will be less motivating once the initial goal is achieved. Referring back to the earlier example, with work-to-unlock rewards, after completing four workouts, consumers would not have earned any rewards yet, and instead be at the brink of being able to finally *start* earning rewards. However, with goal-based lump sum rewards, consumers would receive a $4 bonus after completing four workouts, with the opportunity to earn another $4 bonus after completing an additional four workouts. In this case, those who receive a lump sum

reward after investing effort will feel a greater sense of achievement in terms of reward accumulation (Fishbach et al. 2006; Heath et al. 1999) than those with work-to-unlock rewards who just *start* to receive rewards upon reaching their goal. Thus, we predict that work-to-unlock rewards are more motivating than goal-based lump sum rewards, causing consumers continue to persist *after* they reach their goal. Specifically, while both of these reward structures encourage goal setting, work-to-unlock rewards will lead consumers to surpass the goal due to a lower sense of achievement toward reward accumulation.

> **H3**: Consumers persist longer with work-to-unlock rewards than goal-based lump sum rewards.

Length of the Unlocking Period

If work-to-unlock rewards are more motivating than work-to-receive rewards in part because they cause people to adopt a goal, this effect should attenuate for goals that are less likely to be adopted. People are more likely to adopt more attainable goals, whereas goals that are perceived as less attainable (e.g., farther away) may be less likely adopted (Carver and Scheier 1990; Locke and Latham 1990) and experienced as demotivating (Sharif and Shu 2017, 2021; Soman and Cheema 2004). Further, because consumers' motivation to reach a goal depends on both their expectancy of reaching the goal and value of the goal (Atkinson 1957; Tolman 1955), consumers are likely to be less motivated to start pursuing the goal when the expected likelihood of achieving it is low (Feather 1982; Louro, Pieters, and Zeelenberg 2007). Thus, if goal setting in part explains increased motivation with work-to-unlock (vs. work-to-receive) rewards, this effect will be moderated by perceived attainability of unlocking rewards.

> **H4**: The length of the unlocking period will moderate the effect of work-to-unlock rewards on persistence. Consumers will persist relatively more with work-to-unlock rewards (vs. work-to-receive rewards) when the initial goal is perceived as more (vs. less) attainable.

Eight real behavior studies (seven preregistered) using incentive compatible designs test and support our predictions (summarized in table 1). In particular, studies 1a–1d demonstrate the basic effect across various domains (i.e., flossing, exercising, defining words, evaluating products). Study 2 compares work-to-unlock rewards with work-to-receive rewards when people are encouraged to adopt a mere goal. We find that consumers are initially more motivated to reach their goal with work-to-unlock rewards and work-to-receive rewards with a mere goal compared with standard work-to-receive rewards. However, after reaching the goal, consumers persist longer with work-to-unlock rewards than work-to-receive rewards with a mere goal. Study 2 thus demonstrates the role of low progress/

accomplishment in earning rewards in motivating those receiving work-to-unlock rewards. Study 3a compares work-to-unlock rewards with goal-based lump sum rewards, finding those in the lump sum condition are more likely to disengage from the task after reaching the initial goal than those in the work-to-unlock condition, further demonstrating the role of low progress in earning rewards. Study 3b provides further evidence that consumers with work-to-unlock rewards are more likely to persist after reaching the goal to unlock rewards, even when all participants are required to reach a certain reference point. Lastly, in study 4, we reveal a theoretically consistent boundary condition of the effect: length of the unlocking period. For data, syntax, materials, and preregistrations, see OSF link: https://osf.io/ybdt2/?view_only=2adec456cf784d85814becbac7c182bd.

STUDY 1A: WORK-TO-UNLOCK REWARDS INCREASE FLOSSING OVER 12 DAYS

Study 1a examined the effectiveness of work-to-unlock (vs. work-to-receive) rewards in motivating people to floss their teeth. Regular dental flossing is widely recommended to prevent periodontal diseases (Schüz et al. 2009), but only a third of US adults report daily flossing (Fleming et al. 2018). We accordingly examined whether work-to-unlock rewards can help consumers start and maintain a flossing habit. While all of our studies examine the effect of work-to-unlock (vs. work-to-receive) rewards on real behavior, this study examined this behavior longitudinally over 12 days. We predicted that participants assigned to receive work-to-unlock rewards would persist in flossing for a greater number of days compared with those receiving work-to-receive rewards.

Method

Participants were incentivized to floss their teeth for 12 days and needed to upload a picture of themselves flossing each day as evidence of this behavior. We preregistered this study and opened the HIT for 3,000 workers on Amazon's Mechanical Turk (MTurk), as we anticipated people may not qualify or be interested in completing the study (e.g., because they did not have floss).

A total of 1,703 participants completed the sign-up survey on day 0 and received a $0.50 base payment. Participants were informed that in this study, they would be encouraged to floss their teeth for 12 days and could earn up to $2.88 total for flossing their teeth. They learned that they would receive more details about the specific bonus on day 1 of the study. Further, they learned that to qualify for the study, they had to have floss on day 1. This ensured that all participants had the necessary supplies to participate and were capable of uploading a photo of themselves flossing starting from day 1 of the 12-day study.

TABLE 1

SUMMARY OF FINDINGS ACROSS STUDIES 1–4

Study	Domain (N)	IV	DV	Finding
1a[a]	Flossing (647)	Work-to-Unlock vs. Work-To-Receive	Days flossed out of 12	Participants in work-to-unlock (vs. work-to-receive) condition persisted longer (H1).
1b[a]	Exercising (300)	Work-to-Unlock vs. Work-To-Receive	Exercises completed out of 16	
1c[a]	Defining words (246)	Work-to-Unlock vs. Work-To-Receive	Words defined out of 40	
1d[a]	Evaluating products (896)	Work-to-Unlock vs. Work-To-Receive vs. Work-to-Unlock-Surprise	Products evaluated out of 10	Participants in work-to-unlock (vs. work-to-receive) condition evaluated more products. Surprise work-to-unlock reward structure is less effective (H1).
2[a]	Exercising (750)	Work-to-Unlock vs. Work-to-receive vs. Work-to-Receive with Goal	Exercises completed out of 16	Participants in the work-to-receive with goal condition are initially as motivated to reach the goal as those in the work-to-unlock condition, but persist less afterwards (H2).
3a[a]	Defining words (304)	Work-to-Unlock vs. Goal-Based Lump Sum	Words defined out of 40	Participants in the work-to-unlock condition defined more words than those in the goal-based lump sum condition (H3).
3b[a]	Exercising (1,066)	Work-to-Unlock vs. Work-to-Receive vs. Goal-Based Lump Sum	Exercises completed out of 16	Participants in the work-to-unlock condition persisted more after reaching the target goal than those in the work-to-receive and goal-based lump sum conditions (H1/H3).
4	Typing words (816)	Work-to-Unlock vs. Work-to-Receive vs. Work-to-Unlock-Longer Unlocking Period vs. Lump Sum	Words typed out of 100	Participants receiving work-to-unlock rewards who had a longer unlocking period typed fewer words than those who had a shorter unlocking period (H4).

[a]Preregistered. Preregistration PDFs are available at OSF.

Notably, participants were *not* yet randomly assigned to condition.

On day 1, all participants who completed the sign-up survey were emailed a survey link to participate in the main study. Seven hundred fifty-two participants returned on day 1 and were randomly assigned to one of two conditions. In the Work-to-Receive condition, participants learned that they would be paid $0.24 each day that they flossed their teeth. In the Work-to-Unlock condition, participants learned that they would not be paid for the first three days that they flossed. However, after three days, they would receive $0.32 for every day that they flossed. These reward magnitudes hold constant the total possible amount participants could receive if they successfully flossed for 12 days (i.e., $2.88 total in both conditions). Participants received no other payment than that described above. To ensure participants understood the instructions, after learning about their assigned reward structure, we required participants to pass an attention check. Eighty-six percent of participants passed the attention check, which did not differ between conditions; those who did not pass were not eligible to participate, leaving a final sample of 647 participants ($M_{age} = 34.22$; age range = 18–74; 231 males). After this, participants uploaded a picture of themselves flossing on day 1.

Each subsequent day, participants returned to the survey link. They were informed what day of the study it was (e.g., day 2), how many days of the study remained, and how many days they had flossed their teeth thus far. They were also informed how much they had earned from flossing that day (or how many days they had left before they would start to earn money for flossing in the Work-to-Unlock condition). Lastly, they were reminded of their reward structure. Participants did not receive daily reminders to complete the survey and could only complete the survey (which counted as flossing on a given day) by uploading a picture of themselves flossing.

Notably, participants did not need to floss on consecutive days. For example, in the Work-to-Unlock condition,

FIGURE 2

STUDY 1A: DAYS FLOSSED WITH WORK-TO-UNLOCK VS. WORK-TO-RECEIVE REWARDS
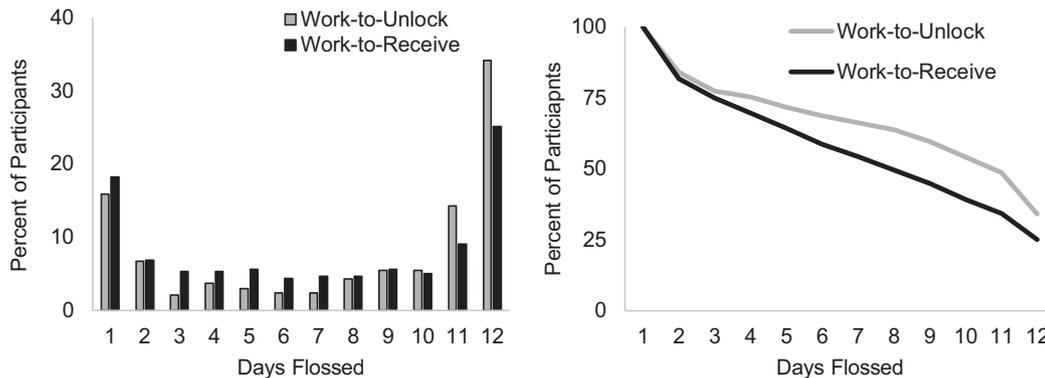
NOTE.—The left panel provides a histogram of number of days flossed; the right panel displays when participants stopped flossing. These figures highlight the benefit of work-to-unlock rewards.

if participants flossed on days 1, 3, and 5 of the study, they would then start receiving their bonus on day 6, if they chose to floss that day.

Results

As predicted, participants in the Work-to-Unlock (vs. Work-to-Receive) condition flossed significantly more days ($M_{\text{Work-to-unlock}} = 8.03$, SD $= 4.33$; $M_{\text{Work-to-receive}} = 6.96$, SD $= 4.29$; $\beta = -1.07$, SE $= .34$, $t(645) = -3.15$, $p = .002$, 95% CI $[-1.73, -.40]$, $d = .25$; figure 2). This effect held when controlling for prior flossing behavior ($\beta = -1.08$, SE $= .34$, $t(644) = -3.18$, $p = .002$, 95% CI $[-.17, -.41]$); there was no significant interaction between prior flossing behavior and condition ($\beta = -.17$, SE $= .28$, $t(643) = -.62$, $p = .53$; 95% CI $[-.71, .37]$), suggesting a similar pattern of results regardless of prior behavior.

The design of this study necessarily means we cannot observe the full extent of participants' motivation (i.e., motivation to floss past 12 days). We accordingly examined the percent of people who flossed for all 12 days (29.7%; Work-to-Unlock $= 34.1$%; Work-to-Receive $= 25.1$%; $\beta = -.44$, SE $= .17$, Wald $= 6.33$, $p = .012$). Our results hold when conducting a Cox regression for survival analysis, which considers this right-side censorship of the data ($\beta = .29$, exp (β)/Hazard Ratio $= 1.34$, SE $= .094$, z $= 3.12$, $p = .002$). We present this analysis for all remaining studies.

Discussion

In a longitudinal study examining real flossing behavior, Work-to-Unlock rewards increased persistence flossing relative to Work-to-Receive rewards. Participants who received no rewards for three days, and then began receiving

rewards for every day they subsequently flossed, flossed 15% more than those who started to receive rewards for flossing right away. Work-to-Unlock rewards can thus help consumers pursue a consequential health behavior.

STUDY 1B: WORK-TO-UNLOCK REWARDS INCREASE EXERCISING EVEN WHEN FEWER REWARDS ARE AVAILABLE

Study 1a held the total possible reward earned constant across conditions. As a result, those in the Work-to-Unlock (vs. Work-to-Receive) condition received slightly larger rewards per task after unlocking their rewards ($0.08 difference). This difference in reward magnitude per task is unlikely to explain our effect given that these magnitude differences were small, people are less sensitive to absolute differences, and our between-subjects design does not allow for joint comparison. However, to further rule out the possibility that reward magnitude drives this effect, study 1b conceptually replicated study 1a, holding constant the payment amount per task—meaning that the total possible bonus was actually lower in the Work-to-Unlock (vs. Work-to-Receive) condition. This provides a conservative test of our hypothesis, as the payment structure necessarily means that those in the Work-to-Unlock condition have the opportunity to earn *less* than those in the Work-to-Receive condition. We also extended study 1a by examining persistence in a new goal-domain: a fitness activity.

Method

We preregistered this study and recruited 300 MTurk workers ($M_{\text{age}} = 42.60$; age range $= 19–83$; 170 males).

FIGURE 3

STUDY 1B: WORKOUTS COMPLETED WITH WORK-TO-UNLOCK VS. WORK-TO-RECEIVE REWARDS
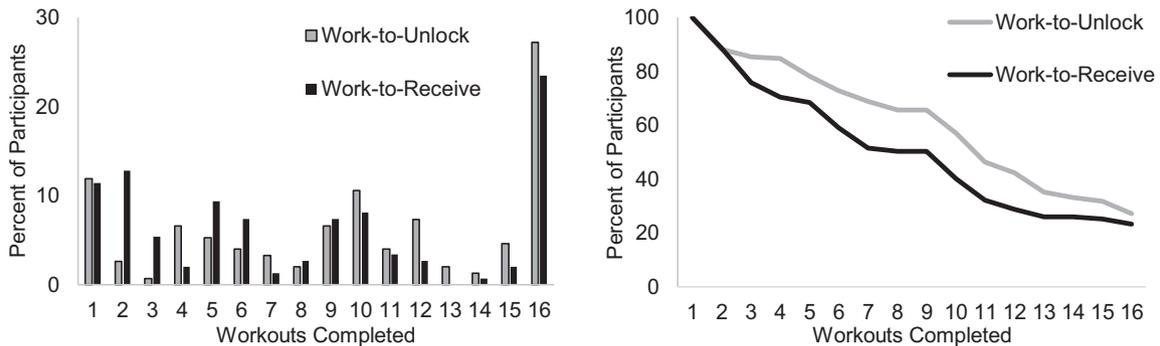
NOTE.—The left panel provides a histogram of number of workouts completed, and the right panel provides a line graph displaying when participants stopped completing the workouts.

Participants learned that they would complete a series of short workouts. They were informed that each workout would last for 30 seconds and could be easily performed from a seated position (see OSF for an example). Participants received a $0.40 base payment for participating.

Participants were randomly assigned to one of two between-subjects conditions (Work-to-Receive vs. Work-to-Unlock). In the Work-to-Receive condition, participants learned that they would receive five points, worth a $0.02 bonus, and a badge for each workout they completed, starting from the first workout they completed. In the Work-to-Unlock condition, participants learned that they would not receive any points/badge for the first four workouts. After completing four workouts, they would receive five points/a badge, worth a $0.02 bonus for each workout they completed. After each workout, participants chose whether to continue on to the next workout. There were a total of 16 workouts. Thus, the maximum amount participants could earn in the Work-to-Unlock condition was 33% lower than in the Work-to-Receive condition.

Results

Participants worked out significantly more in the Work-to-Unlock (vs. Work-to-Receive) condition ($M_{\text{Work-to-unlock}}$ = 9.80, SD = 5.32; $M_{\text{Work-to-receive}}$ = 8.15, SD = 5.53; β = −1.65, SE = .63, $t(298)$ = −2.64, p = .009, 95% CI [−2.89, −.42], d = .30; figure 3).[1] Precisely, 25.3% of

participants completed all workouts (Work-to-Unlock = 27.2%; Work-to-Receive = 23.5%; β = −.19, SE = .27, Wald = .53, p = .466). We find a similar pattern of results when using a Cox regression (β = .25, exp (β)/Hazard Ratio = .78, SE = .13, z = 1.88, p = .060).

Discussion

Study 1b demonstrated benefits of work-to-unlock (vs. work-to-receive) rewards for persistence exercising. Importantly, work-to-unlock (vs. work-to-receive) rewards increased persistence even when those working to unlock rewards could only earn 67% of what those in the Work-to-Receive condition were able to earn. This suggests that the findings in study 1a are not due to differences in reward magnitude.

STUDY 1C: IMPACT OF WORK-TO-UNLOCK VERSUS WORK-TO-RECEIVE NONMONETARY REWARDS ON PERSISTENCE

Study 1c examined if our effect is robust to nonmonetary rewards, as companies often use such rewards (e.g., badges, stickers, points based on accomplishments) to motivate consumers. For example, the Nike+ running app rewards runners for reaching certain milestones by entering them into different colored levels marking their achievements (e.g., Yellow: 0–30 miles; Orange: 31–154 miles; Green: 155–620 miles; etc.) and the Lose It! weight loss app provides different virtual badges to people depending on what goals they have achieved (e.g., logging weight for a certain number of days in a row; exercising for a certain number of days).

---

1   At the end of the survey, participants were asked to indicate if they actually followed the exercises in the video. They were told that their answer would not affect their payment. Precisely, 3.0% of participants reported they did not try the workouts at all. Our results hold when excluding these participants (β = 1.74, SE = .63, $t(289)$ = 2.76, p = .006, 95% CI [.50, 2.97]).

Mirroring study 1b, we held the amount of continuous reward per task constant in study 1c such that participants were eligible to receive fewer total rewards in the Work-to-Unlock condition than in the Work-to-Receive condition. Lastly, we examine our effect with a different population: a university sample, as well with a different task: defining words.

Method

We preregistered this study and aimed to recruit 200–300 participants. We posted this survey to a listserv of students and alumni from a large university in the US Northeast who participated for the chance to win a $25 gift card. A total of 246 participants (M_{age} = 25.91; age range = 18–67; 65 males) completed the study.

Participants were randomly assigned to one of two conditions (Work-to-Receive vs. Work-to-Unlock) in a between-subjects design. All participants had the opportunity to define 40 vocabulary words. They were asked to copy and paste the definition for each word from dictionary.com. In the Work-to-Receive condition, participants learned that they would receive one colored smiley face "badge" for every word that they defined. The badges built on each other; for example, after defining two words, participants received two colored smiley faces; after defining three words, they received three colored smiley faces. To mirror applications that use virtual rewards, the badges were displayed in a predictable color pattern following colors of the rainbow (i.e., red, orange, yellow, green, blue). In the Work-to-Unlock condition, participants were informed that they would not receive any smiley face badges until they defined 15 words. After this point, they learned that they would receive one smiley face badge for every

word that they defined (starting from the same first badge displayed in the Work-to-Receive condition). As a result, participants in the Work-to-Receive condition could receive up to 40 badges while those in the Work-to-Unlock condition could only receive up to 25 badges. Participants could choose to stop defining words at any point.

Results

As predicted, participants defined more words in the Work-to-Unlock (vs. Work-to-Receive) condition ($M_{Work-to-unlock}$ = 20.14, SD = 15.76; $M_{Work-to-receive}$ = 13.65, SD = 14.80, β = −6.49, SE = 1.95, $t(244)$ = −3.33, p = .001, 95% CI [−10.33, −2.65], d = .43; figure 4). In total, 26.8% of participants defined all 40 words (Work-to-Unlock = 33.1%; Work-to-Receive = 20.5%; β = −.65, SE = .30, Wald = 4.88, p = .027). Results hold when conducting a Cox regression for survival analysis (β = .46, e (β)/ Hazard Ratio = .63, SE = .15, z = 3.06, p = .002).

Discussion

Study 1c demonstrates that the effect of work-to-unlock (vs. work-to-receive) rewards is robust to nonmonetary, virtual "badges" common in apps people join to motivate pursuit of various goals. Additionally, study 1c expands beyond motivating health behaviors (i.e., flossing in study 1a; exercising in study 1b), to reveal that the effect of work-to-unlock rewards motivates persistence in mundane tasks, suggesting this reward structure could help consumers persist toward similar goals that require repeated behavior, such as studying vocabulary when learning a language.

FIGURE 4

STUDY 1C: WORDS DEFINED WITH WORK-TO-UNLOCK VS. WORK-TO-RECEIVE REWARDS
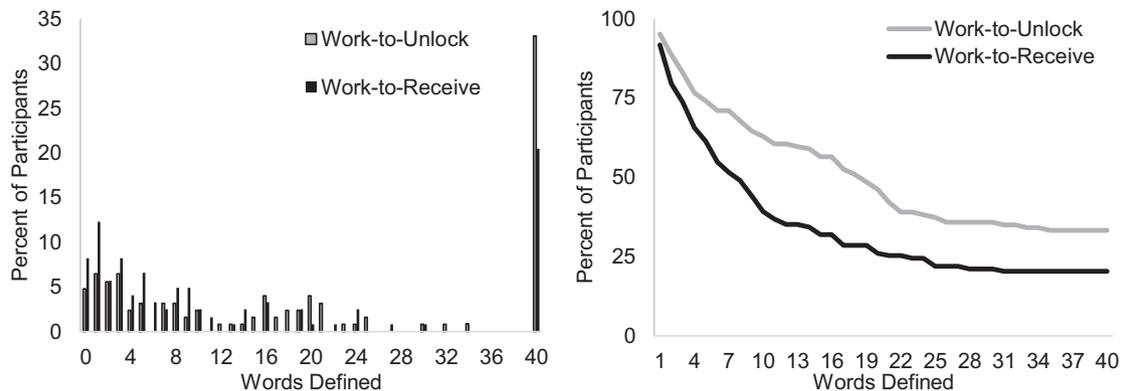
NOTE.—The left panel provides a histogram of number of words defined, and the right panel provides a line graph displaying when participants stopped defining the words.

STUDY 1D: PRODUCT EVALUATION WITH WORK-TO-UNLOCK (VS. WORK-TO-RECEIVE) REWARDS

Study 1d examined if our effect generalizes to product evaluation contexts. Often when consumers shop for items, they spend time and effort finding an option they prefer the most. Consumers can find the process of choosing between options unpleasant (Luce, Bettman, and Payne 1997), with many reporting that shopping "feels like a chore" (Amato-McCoy 2017). We accordingly examined if work-to-unlock rewards could increase consumers' persistence in evaluating products relative to work-to-receive rewards. Second, we examined if the timing of *when* consumers learn about work-to-unlock rewards matters. Marketers may be tempted to "surprise" consumers with rewards, hoping the unexpected reward is motivating. That is, they may not inform consumers upfront that they will receive rewards until they have "unlocked" them. We expect surprising consumers with rewards will be less motivating than typical work-to-unlock rewards.

Method

We preregistered this study and aimed to recruit 900 participants from MTurk. A total of 896 participants (M_{age} = 38.56; age range = 19–78; 527 males) completed this study. All participants were informed that they would complete an online shopping trip in which they would evaluate a series of products (e.g., desktop organizer, scissors, paper towels). For each product category, there were five available products to choose from. To simulate an online evaluation experience, participants examined the products and ranked them from least expensive to most expensive, as well as from highest star rating to lowest star rating, before making their product choice. Participants received a $0.50 base payment for participating.

Participants were randomly assigned to one of three conditions (Work-to-Receive vs. Work-to-Unlock vs. Work-to-Unlock-Surprise). The first two conditions proceeded similarly to studies 1a–1c. In the Work-to-Receive condition, participants were informed in advance that they would receive 10 points for each product evaluated. In the Work-to-Unlock condition, participants learned in advance that they would not receive any points for the first three products but that after evaluating three products, they would receive 10 points for each product evaluated. The Work-to-Unlock-Surprise condition proceeded similarly to the Work-to-Unlock condition; however, participants were not informed in advance that they would receive rewards. They learned about the reward structure *after* unlocking rewards (i.e., after evaluating three products).

There were 10 categories of products that participants could evaluate. After each product, participants were asked if they wanted to shop for another product. Across conditions, participants were informed that the 10 points were worth a 2-cent bonus. Thus, similar to studies 1b and 1c, the total amount of money participants could earn in the two Work-to-Unlock conditions was 30% less than those in the Work-to-Receive condition.

FIGURE 5

STUDY 1D: WORKOUTS COMPLETED AS FUNCTION OF REWARD STRUCTURE
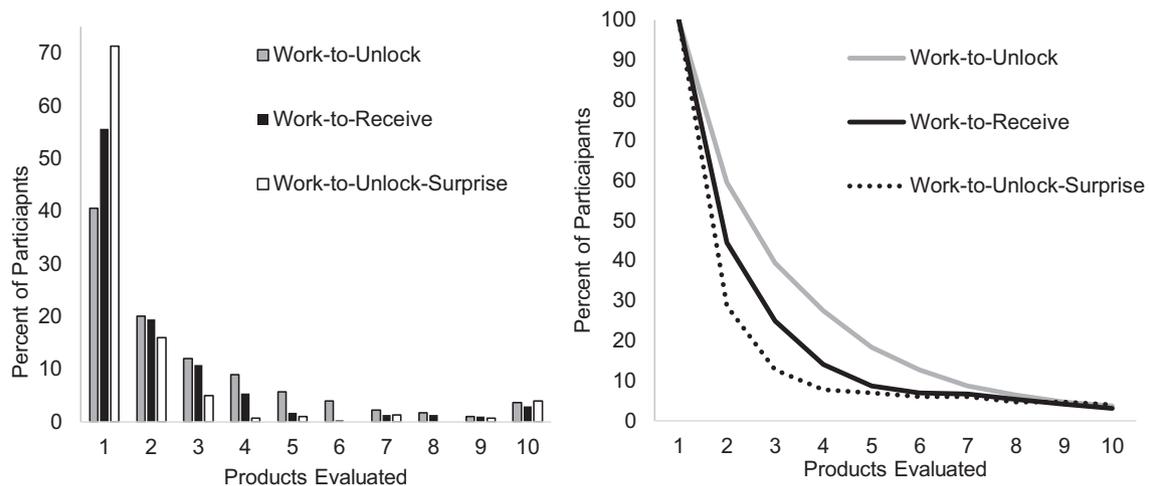
NOTE.—The left panel provides a histogram of number of products evaluated, and the right provides a line graph displaying when participants stopped evaluating the products.

Results

We conducted a linear regression predicting number of products evaluated from two dummy variables representing conditions, with the Work-to-Unlock condition as the reference group. Participants evaluated more products in the Work-to-Unlock condition than the Work-to-Receive condition ($M_{\text{Work-to-unlock}} = 2.81$, SD $= 2.33$; $M_{\text{Work-to-receive}} = 2.19$, SD $= 2.08$; $\beta = -.62$, SE $= .18$, $t(893) = -3.55$, $p < .001$, 95% CI $[-.97, -.28]$, $d = .29$; figure 5). Further, we found that the effect of Work-to-Unlock rewards attenuated if consumers did not know that there were rewards to unlock. Indeed, participants persisted less in the Work-to-Unlock-Surprise condition than the Work-to-Unlock condition ($\beta = -1.00$, SE $= .18$, $t(893) = -5.68$, $p < .001$, 95% CI $[-1.34, -.65]$, $d = .46$) and the Work-to-Receive condition ($\beta = -.37$, SE $= .18$, $t(893) = -2.12$, $p = .035$, 95% CI $[-.72, -.03]$, $d = .19$). Precisely, 3.6% of participants evaluated all 10 products (Work-to-Unlock $= 3.7\%$ vs. Work-to-Receive $= 3.0\%$; $\beta = -.20$, SE $= .46$, Wald $= .19$, $p = .66$; vs. Work-to-Unlock-Surprise $= 4.0\%$; $\beta = .087$, SE $= .43$, Wald $= .042$, $p = .84$). Our results hold when conducting a Cox regression (Work-to-Unlock vs. Work-to-Receive: $\beta = .28$, exp (β)/Hazard Ratio $= 1.33$, SE $= .084$, z $= 3.37$, $p < .001$; Work-to-Unlock vs. Work-to-Unlock-Surprise: $\beta = .53$, exp(β)/Hazard Ratio $= 1.70$, SE $= .084$, z $= 6.30$, $p < .001$).

Discussion

We find that work-to-unlock rewards can motivate consumers to persist in evaluating products relative to work-to-receive rewards (H1). Further, this study demonstrates a simple practical point for marketers: they should inform consumers about work-to-unlock rewards prior to starting the goal-relevant task, as "surprising" customers with rewards is not as motivating.

Overall, studies 1a–1d demonstrate that work-to-unlock rewards are motivating across several different domains. Of course, a work-to-unlock reward structure is only beneficial to the extent that people sign up for the program in the first place. To measure how a work-to-unlock (vs. work-to-receive) reward structure affects sign-up rates, we conducted two preregistered posttest studies, using the exact same reward structure in study 1a and study 1c. Specifically, we offered participants the opportunity to sign up for a flossing program (study 1a posttest) or word definition program (study 1c posttest). We then randomly assigned participants to learn about either the work-to-unlock or work-to-receive reward structure and measured interest in signing up for the program (yes/no). For both posttests, a majority of participants were interested in participating, which did not significantly differ across reward conditions (study 1a: $N = 422$; $M_{\text{age}} = 38.17$; age range $= 18$–77; 248 males; Work-to-Receive $= 92.9\%$ vs.

Work-to-Unlock $= 88.7\%$; $\beta = .51$, SE $= .34$, Wald $= 2.16$, $p = .142$; study 1c: $N = 406$; Work-to-Receive $= 74.5\%$ vs. Work-to-Unlock $= 70.8\%$; $\beta = .19$, SE $= .22$, Wald $= 7.05$, $p = .401$). Further, via Bayesian analyses, we provide a statistical test of the null hypothesis that there is no difference in interest in signing-up across conditions (Jeffreys 1998). We computed Bayes factors (BF_{10}; BF_{01}) for the effect of reward structure on interest in participating in the program (flossing: $BF_{01} = 1.64$; $BF_{10} = .61$; defining words: $BF_{01} = 6.38$; $BF_{10} = .16$). Note that $BF_{01} > 1$ represents evidence in favor of the null model (that there is no effect of reward condition on interest in joining), whereas $BF_{10} > 1$ represents evidence in favor of the alternative model (that there is an effect of condition on interest in joining). We thus establish the degree of support for a null effect of reward condition on interest in joining.

Building on these results, our next study puts these results together to examine the benefits of work-to-unlock rewards when consumers first need to decide whether to opt into the reward program itself. Further, we provide insight into part of the process underlying work-to-unlock rewards by examining the role of mere goal setting with work-to-receive rewards in influencing persistence.

STUDY 2: MERE GOAL SETTING WITH WORK-TO-RECEIVE REWARDS

We suggest that two features of work-to-unlock rewards lead to increased motivation relative to work-to-receive rewards. First, work-to-unlock rewards encourage consumers to strive toward an earlier goal to start receiving rewards (phase 1). That is, work-to-unlock rewards set an implicit reference point that consumers adopt. Second, people experience a lack of progress/achievement toward earning rewards and thus do not see goal achievement as a signal to stop pursuit (Amir and Ariely 2008; Fishbach and Dhar 2005). Because work-to-unlock rewards are delayed, consumers' progress, and sense of achievement toward earning rewards, is lower than with work-to-receive rewards, holding constant the total amount of tasks completed.

To examine this hypothesis, we compared work-to-unlock rewards with work-to-receive rewards and with work-to-receive rewards + a mere goal. We expected consumers in the work-to-receive rewards + mere goal condition to be motivated initially to reach the mere goal, similar to those with work-to-unlock rewards. However, after reaching this goal, they would be more likely to disengage from the task, as they feel a sense of achievement from both reaching their goal, as well as accumulating a sufficient amount of rewards.

Method

We preregistered this study and aimed to recruit 750 participants from MTurk. A total of 750 participants completed this study (M_{age} = 38.08; age range = 19–80; 429 males). This study followed a similar design to study 1b. All participants learned that they would be asked to complete a series of short workouts and received a $0.40 base payment for participating.

Participants were randomly assigned to one of three conditions (Work-to-Receive vs. Work-to-Unlock vs. Work-to-Receive with Goal) in a between-subjects design. In the Work-to-Receive condition, participants were informed that they would receive five points, worth a 2-cent bonus, and a badge for each workout they completed, starting from the first workout they completed. In the Work-to-Unlock condition, participants were informed that that they would not receive any points/badge for the first four workouts. After completing four workouts, they would receive five points/a badge, worth a 2-cent bonus, for each workout they completed. In the Work-to-Receive with Goal condition, in addition to receiving the same rewards as those in the Work-to-Receive condition, participants were also told, "Your goal is to complete at least four workouts."

In addition to measuring persistence, we explicitly measured interest in participating in the exercise program as a function of the assigned reward structure. After learning about their reward, participants were asked, "Would you like to start the workouts and earn the bonus or would you like to skip the workouts?" Participants were told they would still receive their participation payment ($0.40) regardless of their decision. If participants indicated "yes," they started the workouts. If they said "no," they were redirected to the final questions of the survey.

Participants who agreed to start the workouts were asked after each workout whether they wanted to continue and complete the next workout; thus, they could quit the fitness activity at any time. Like study 1b, there were a total of 16 workouts. The maximum amount participants could earn in the Work-to-Unlock condition was 33% lower than in the other conditions. At the end of the survey, we examined whether participants' tendency to set a goal differed depending on condition as we predicted, by asking "Did you set a goal to complete at least four workouts?"

We also measured a potential alternate explanation. Possibly *not* being rewarded initially leads people to build intrinsic motivation for the task (Ryan and Deci 2000; Woolley and Fishbach 2017), leading to greater persistence in the work-to-unlock condition. To test this, we asked two questions assessing intrinsic motivation, both on 100 point scales: (1) "How much did you enjoy completing the workouts" with 0 = "Not at all Enjoy" and 100 = "Enjoyed Very Much" and (2) "How much did the workouts feel like work vs. fun" with 0 = "Feels Like Work" and 100 = "Feels like Fun." Contrary to an explanation based on intrinsic motivation, we expected a null effect of reward condition on this measure.

Results

Program Interest. Overall, participants were highly motivated to participate in the program (82.5%). A logistic regression of interest on two dummy variables (with Work-to-Unlock as the reference group) revealed no significant difference between the Work-to-Unlock (79.6%) and Work-To-Receive conditions (81.7%; β = .137, SE = .23, Wald = .361, p = .548), similar to our study 1a and 1c posttests. There was a marginally significant difference when comparing Work-to-Unlock with the Work-to-Receive with Goal condition (86.2%; β = .469, SE = .24, Wald = 3.74, p = .053).

Persistence. Of those who started the task, participants completed significantly more workouts in the Work-to-Unlock (vs. Work-to-Receive) condition ($M_{Work-to-unlock}$ = 8.14, SD = 5.30; $M_{Work-to-receive}$ = 7.03, SD = 4.97; β = −1.11, SE = .49, $t(616)$ = −2.26, p = .024, 95% CI [−2.08, −.146], d = .22) and marginally significantly more workouts in the Work-to-Unlock (vs. Work-to-Receive with Goal) condition ($M_{Work-to-receive with Goal}$ = 7.20, SD = 4.53; β = −.94, SE = .49, $t(616)$ = −1.93, p = .054, 95% CI [−1.90, .014], d = .19; figure 6).

Goal Setting. Examining the goal-setting process, we conducted a logistic regression of goal setting on two dummy variables, this time with the Work-to-Receive condition as the reference group. Confirming our theorizing, participants were significantly more likely to set a goal in the Work-to-Unlock (vs. Work-to-Receive) condition ($M_{Work-to-unlock}$ = 77.0%; $M_{Work-to-receive}$ = 56.7%; β = .94, SE = .22, Wald = 17.98, p < .001). In line with our manipulation, participants were also more likely to set a goal in the Work-to-Receive with Goal (vs. Work-to-Receive) condition ($M_{Work-to-receive with Goal}$ = 89.9%; β = 1.92, SE = .26, Wald = 52.64, p < .001).

Further, participants were significantly more likely to reach this goal and complete at least four workouts in the Work-to-Receive with Goal condition (83.0%) than the Work-to-Receive condition (68.1%; β = .83, SE = .23, Wald = 12.63, p < .001) and marginally significantly more likely in the Work-to-Unlock condition (76.4%) than the Work-to-Receive condition (β = .42, SE = .23, Wald = 3.44, p = .064). This analysis suggests that setting a goal leads consumers to be *initially* more motivated to reach that goal.

However, as we predicted, persistence after the goal differed substantially between participants in the Work-to-Unlock condition and Work-to-Receive with Goal conditions. Of participants who reached the goal, participants were significantly more likely to persist and complete more workouts in the Work-to-Unlock condition ($M_{Work-to-}$

FIGURE 6

STUDY 2: WORKOUTS COMPLETED AS FUNCTION OF REWARD STRUCTURE
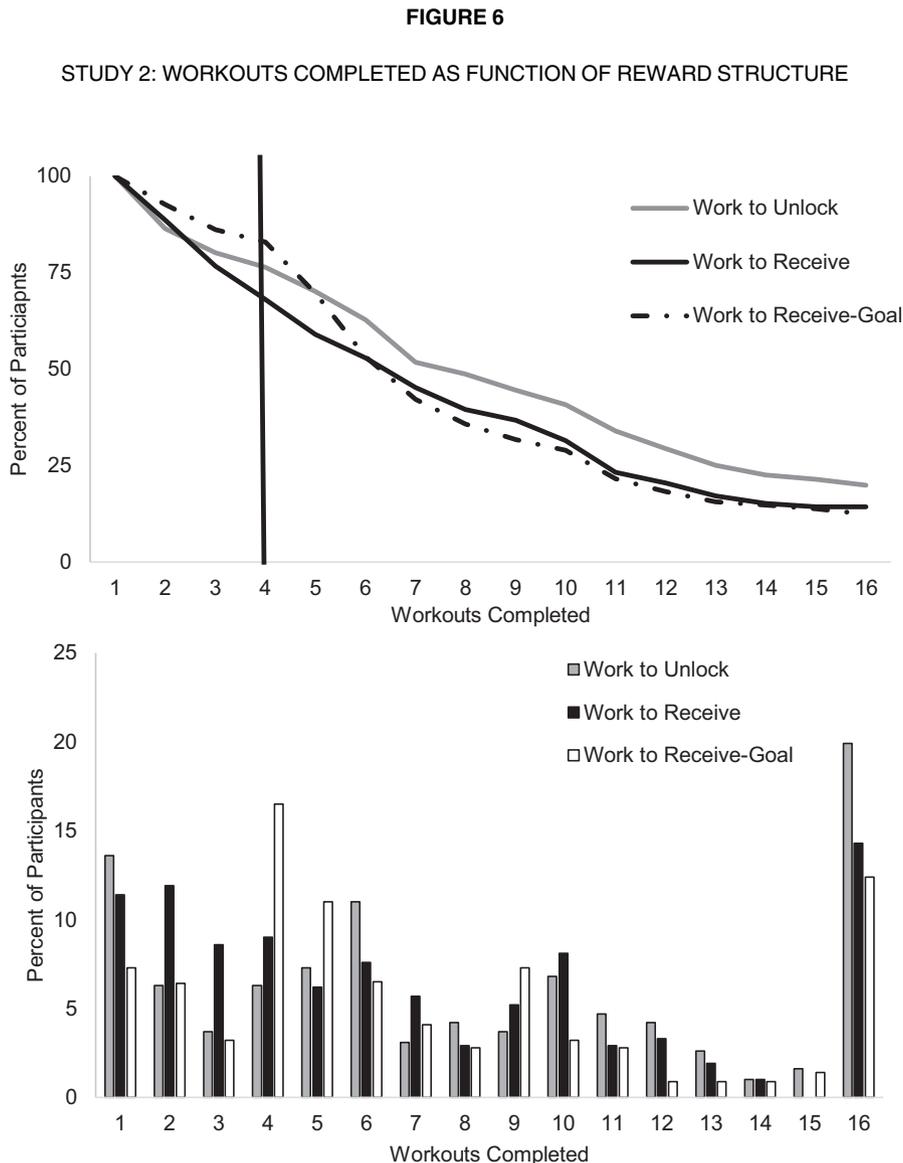
NOTE.—The top panel provides a histogram of number of workouts completed, and the bottom panel provides a line graph displaying when participants stopped completing the workouts.

$_{\text{unlock}} = 10.16$, SD $= 4.37$) than the Work-to-Receive-with Goal condition ($M_{\text{Work-to-receive with Goal}} = 8.31$, SD $= 4.15$; $\beta = -1.86$, SE $= .47$, $t(467) = -3.93$, $p < .001$, 95% CI $[-2.78, -.927]$). We find similar, but nonsignificant, evidence that participants persist more after reaching this threshold in the Work-to-Unlock (vs. Work-to-Receive) condition ($M_{\text{Work-to-receive}} = 9.43$, SD $= 4.23$; $\beta = -.74$, SE $= .50$, $t(467) = -1.48$, $p = .140$, 95% CI $[-1.72, .24]$). Note that since we only included participants in this analysis that reached this threshold (e.g., completed at least four workouts), and fewer participants achieved this in the Work-to-Receive condition, we had less power to detect an effect when using this comparison group. Thus, while a

mere goal with work-to-receive rewards encourages people to be initially motivated and reach their goal, similar to those with Work-to-Unlock rewards, they are more likely to stop persisting after reaching it. As a result, a mere goal with work-to-receive rewards does not lead to the same motivational impact on persistence as work-to-unlock rewards.[2]

---

2   In total, 1.6% of participants reported that they did not try the workouts at all. We find the same pattern of results on persistence when excluding these participants (Work-to-Unlock vs. Work-to-Receive; $\beta = -1.08$, SE $= .50$, $t(606) = -2.18$, $p = .030$, 95% CI $[-2.05, -.11]$; vs. Work-to-Receive + Goal; $\beta = -.92$, SE $= .49$, $t(606) = -1.88$, $p = .061$, 95% CI $[-1.89, .04]$).

In total, 15.3% participants completed all 16 exercises (Work-to-Unlock = 19.9% vs. Work-to-Receive = 14.3%; $\beta = -.40$, SE = .27, Wald = 2.22, $p = .136$ vs. Work-to-Receive-Goal = 12.4%; $\beta = -.56$, SE = .27, Wald = 4.23, $p = .040$). We conducted a Cox regression for survival analysis, considering the right side censorship of the data. We find that our results hold with this analysis (Work-to-Unlock vs. Work-to-Receive: $\beta = .24$, exp(β)/Hazard Ratio = 1.27, SE = .11, z = 2.15, $p = .032$; Work-to-Unlock vs. Work-to-Receive-Goal: $\beta = .24$, exp(β)/Hazard Ratio = 1.27, SE = .11, z = 2.21, $p = .027$).

Alternative Accounts. We also examined if reward condition affected task enjoyment (i.e., intrinsic motivation). We averaged our two measures of enjoyment ($r = .82$). We found no significant difference in enjoyment between the Work-to-Unlock and Work-to-Receive conditions ($M_{\text{Work-to-unlock}} = 66.41$, SD = 25.16; $M_{\text{Work-to-receive}} = 63.95$, SD = 26.55; $\beta = -2.46$, SE = 2.50, $t(616) = -.98$, $p = .326$, 95% CI [−7.37, −2.45]) or the Work-to-Unlock and Work-to-Receive with Goal conditions ($M_{\text{Work-to-receive with Goal}} = 67.94$, SD = 23.32; $\beta = 1.53$, SE = 2.48, $t(616) = .62$, $p = .537$, 95% CI [−3.34, 6.40]). This suggests that the effect is not due to greater intrinsic motivation for the task in the Work-to-Unlock condition.

STUDY 3A: SURPASSING THE GOAL WITH WORK-TO-UNLOCK REWARDS VERSUS GOAL-BASED LUMP SUM REWARDS

In study 2, we provided some evidence that setting a goal leads consumers to be motivated *initially*. Indeed, we find that both consumers who set a mere goal with work-to-receive rewards and those with work-to-unlock rewards are more motivated to achieve their initial goal (complete at least four workouts) relative to those with work-to-receive rewards who do not seek an explicit goal. However, consumers are also more likely to *persist* beyond the goal with work-to-unlock rewards. Setting a mere goal in the work-to-receive condition encourages people to reach the goal, but after reaching the goal, people disengage. We suggest this is because consumers are likely to feel a lower sense of progress and achievement toward earning rewards when receiving work-to-unlock rewards relative to work-to-receive rewards.

If this theory is true, other reward structures that encourage goal setting, but that do not result in lower progress toward earning rewards, should also be less motivating than work-to-unlock rewards. Consider goal-based lump sum rewards. Say in this reward structure, consumers can earn a bonus after completing five workouts and then must complete another five works to earn another bonus. This reward structure may motivate consumers to achieve their initial goal (e.g., complete five workouts) but lead to subsequent disengagement once the goal is achieved. Thus, we predict that work-to-unlock rewards are more motivating than goal-based lump sum rewards because consumers persist *after* they reach their goal. Thus, while both of these reward structures encourage goal setting, work-to-unlock rewards will lead consumers to surpass the goal.

Method

We preregistered this study and recruited as many participants from a lab as possible for two weeks. A total of 304 students and staff ($M_{\text{age}} = 27.16$; age range = 18–71; 111 males) from a large university in the Mid Atlantic participated in return for a $3 base payment. We randomly assigned participants to either the Work-to-Unlock or Goal-Based Lump Sum condition. As in study 1c, participants had the opportunity to define 40 vocabulary words. Those in the Work-to-Unlock condition learned that they would not receive a bonus for the first 20 words that they defined; after that point, they would receive 2 cents per word that they defined. Those in the Goal-Based Lump Sum condition learned that they would receive a $0.20 bonus after defining 20 words and another $0.20 bonus after defining another 20 words. Participants could stop defining the vocabulary words at any point.

Results

As predicted, participants defined more vocabulary words in the Work-to-Unlock condition ($M = 26.09$, SD = 16.56) than the Goal-Based Lump Sum condition ($M = 21.96$, SD = 16.86; $\beta = -4.13$, SE = 1.92, $t(302) = -2.16$, $p = .032$, 95% CI [−7.90, −.36]; figure 7).

Notably, a closer look at the distribution of tasks completed reveals a pattern aligned with our theorizing. After reaching the initial 20 word goal, those in the Goal-Based Lump Sum (vs. Work-to-Unlock) condition were more likely to quit. In the Work-to-Unlock condition, 85.7% persisted to define *more* than 20 words, but in the Goal-Based Lump Sum condition, only 73.3% persisted to define more than 20 words ($\beta = -.78$, SE = .37, Wald = 41.28, $p = .033$). Thus, participants completed more tasks after defining the first 20 words in the Work-to-Unlock condition ($M = 36.43$, SD = 7.38) than the Goal-Based Lump Sum condition ($M = 34.22$, SD = 9.05; $\beta = -2.21$, SE = 1.18, $t(193) = -1.88$, $p = .062$, 95% CI [−4.53, .12]).

Although both reward structures encourage goal setting and lead to a majority of participants reaching their goal of defining 20 words in both conditions, it is possible that those in the Work-to-Unlock (vs. Goal-Based Lump Sum) condition may still be initially more motivated to reach their goal. While not significant, directionally more participants reached this goal in the Work-to-Unlock condition (Work-to-Unlock = 67.7%; Goal-Based Lump

FIGURE 7

STUDY 3A: WORDS DEFINED AS FUNCTION OF REWARD STRUCTURE
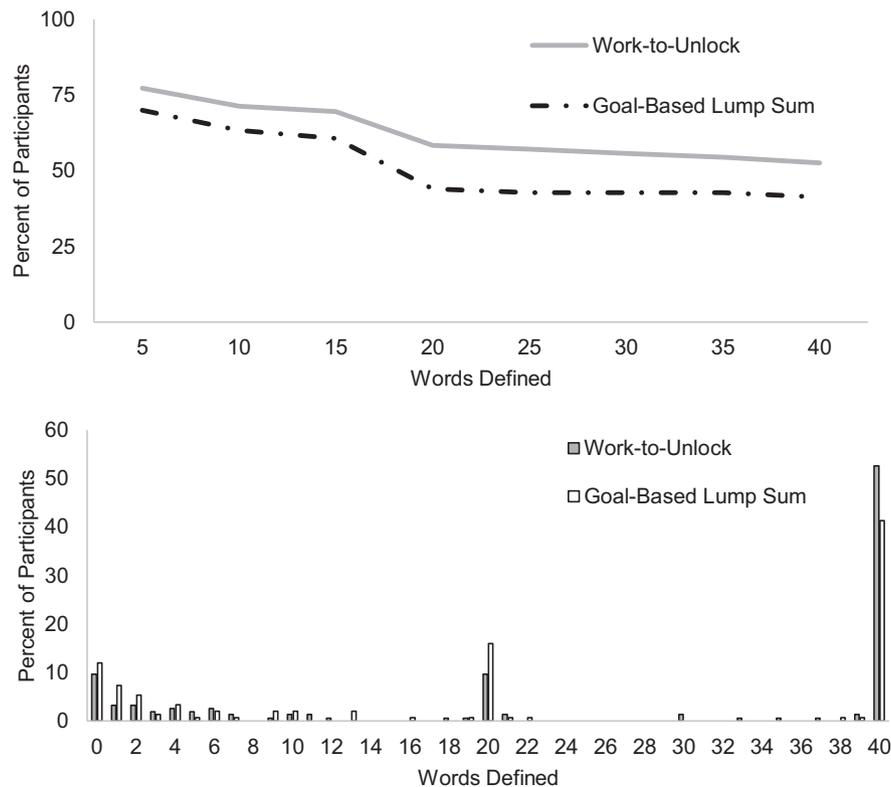
NOTE.—The top panel provides a histogram of number of words defined, and the bottom provides a line graph displaying when participants stopped defining words.

Sum $= 58.7\%$; $\beta = -.36$, SE $= .24$, Wald $= 2.20$, $p = .138$).

Totally, 47.0% participants defined all 40 words (Work-to-Unlock $= 52.6\%$; Goal-Based Lump Sum $= 41.3\%$; $\beta = -.45$, SE $= .23$, Wald $= 3.85$, $p = .050$). Our results hold with a Cox regression ($\beta = .33$, Hazard Ratio $= .72$, SE $= .15$, $z = 2.07$, $p = .038$).

Discussion

This study demonstrates that work-to-unlock rewards outperform other reward structures that similarly encourage goal setting. We suggest this is because work-to-unlock rewards do not lead to the same sense of achievement toward reward accumulation after reaching the goal. Indeed, those in the goal-based lump sum condition were more likely to quit after reaching their goal, compared with those in the work-to-unlock condition.

STUDY 3B: SURPASSING THE GOAL WITH WORK-TO-UNLOCK REWARDS VERSUS WORK-TO-RECEIVE REWARDS AND GOAL-BASED LUMP SUM REWARDS

Studies 2 and 3a demonstrated that conditional on reaching the unlocking threshold, people are less likely to disengage from the task in the Work-to-Unlock condition than the Work-to-Receive condition or the Goal-Based Lump Sum condition. However, these results could be due in part to self-selection. That is, the participants who are more likely to reach the initial goal may also be the type of participants who are more likely to persist with work-to-unlock rewards after getting there. To provide stronger evidence that consumers are more likely to persist after reaching their goal with work-to-unlock rewards, study 3b required all participants to reach the "unlocking" threshold. By holding constant the likelihood of reaching the goal, we

FIGURE 8

STUDY 3B: WORKOUTS COMPLETED AS FUNCTION OF REWARD STRUCTURE
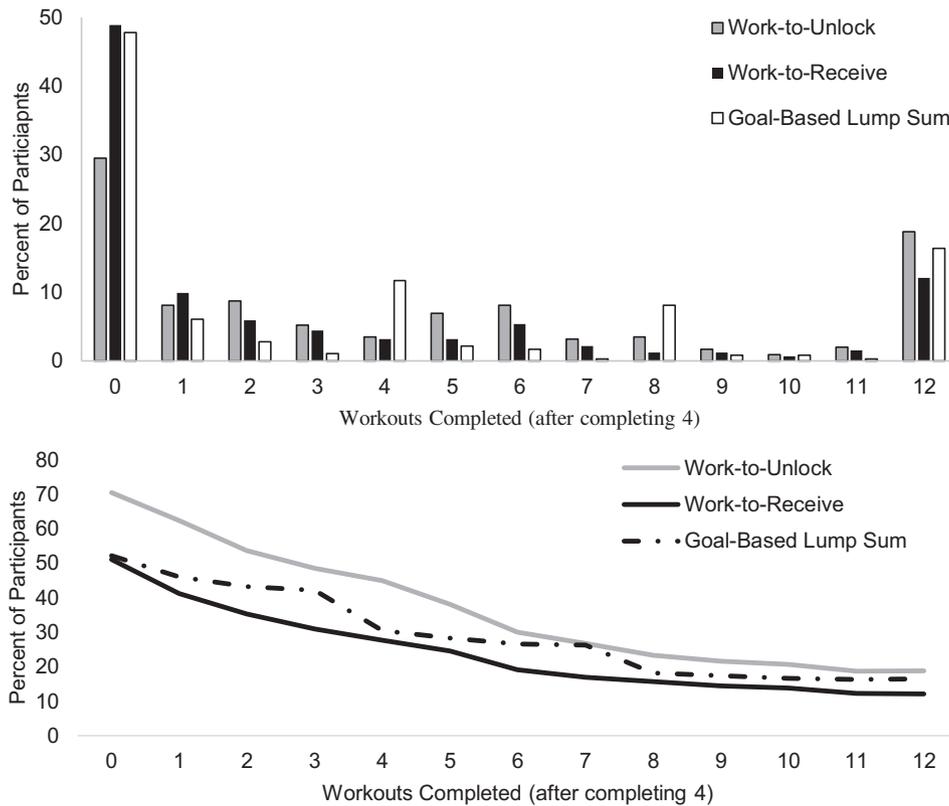
NOTE.—The top panel provides a histogram of number of workouts completed, and the bottom provides a line graph displaying when participants stopped working out.

could examine whether consumers do indeed persist more after they reach it with work-to-unlock rewards (vs. work-to-receive rewards or goal-based lump sum rewards).

Method

We preregistered this study for 1,050 participants. A total of 1,066 MTurk workers participated (M_{age} = 40.77; age range = 19–78; 545 males). Participants received a $0.55 base payment for participating. They were randomly assigned to one of three between-subjects conditions (Work-to-Receive vs. Work-to-Unlock vs. Goal-Based Lump Sum). In the Work-to-Receive condition, participants learned that they would receive five points (worth 2 cents) and a badge, starting from the first workout they completed. In the Work-to-Unlock condition, participants learned that that they would not receive any points/badge for the first four workouts. After completing four workouts, they would receive five points (worth 2 cents) and a badge for each workout completed. In the Goal-Based Lump Sum

condition, participants learned that for every four workouts they completed, they would receive 20 points (worth 8 cents) and a badge.

Unlike in our prior studies, we required all participants to complete the first four workouts. After this point, participants were asked after each of the following 12 workouts whether they wanted to continue and complete the next workout. Thus, participants could complete a maximum of 16 workouts; we measured persistence as the number of workouts out of 12 they chose to complete.

Results

As predicted, participants completed more workouts after the initial four workouts in the Work-to-Unlock condition (M = 4.60, SD = 4.53) than the Work-to-Receive condition (M = 3.40, SD = 4.33; β = −1.20, SE = .34, $t(1063)$ = −3.58, $p < .001$, 95% CI [−1.87, −.54]) and the Goal-Based Lump Sum condition (M = 3.65, SD = 4.56;

$\beta = -.95$, SE $= .34$, $t(1063) = -2.83$, $p = .005$, 95% CI $[-1.62, -.29]$; figure 8).[3]

Totally, 15.6% of participants completed all workouts (Work-to-Unlock $= 18.8\%$ vs. Work-to-Receive $= 13.6\%$; $\beta = -.17$, SE $= .20$, Wald $= 3.46$, $p = .063$; vs. Goal-Based Lump Sum $= 16.4\%$; $\beta = -.17$, SE $= .20$, Wald $= .70$, $p = .41$). Our results held when conducting a Cox regression for survival analysis (Work-to-Unlock vs. Work-to-Receive: $\beta = .36$, Hazard Ratio $= 1.43$, SE $= .08$, $z = 4.51$, $p < .001$; Work-to-Unlock vs. Goal-Based Lump Sum: $\beta = .21$, Hazard Ratio $= 1.24$, SE $= .08$, $z = 2.56$, $p = .011$).

Discussion

Holding constant the likelihood of reaching the unlocking threshold, consumers are more likely to persist in the Work-to-Unlock condition than both the Work-to-Receive condition and the Goal-Based Lump Sum condition. We suggest this is because experiencing lack of progress in the work-to-unlock condition toward earning rewards increases persistence.

To further examine whether consumers indeed feel a lower sense of accomplishment toward earning rewards with Work-to-Unlock rewards compared with Work-to-Receive rewards or Goal-Based Lump Sum rewards, we conducted the following posttest. Using the same design as in study 3b, all participants were required to complete the first four workouts. After completing the four workouts, they were asked on a 100-point scale, "Thinking about the bonus you have earned and the bonus you can earn, how accomplished do you feel?" Compared to the average of the Work-To-Receive and Goal-Based Lump Sum conditions ($M = 74.82$, SD $= 23.33$), participants felt less accomplished in the Work-to-Unlock condition ($M = 67.36$, SD $= 27.98$; $\beta = -7.46$, SE $= 2.79$, $t(358) = -2.68$, $p = .008$, 95% CI $[-12.94, -1.97]$). Specifically, participants felt less accomplished in the Work-to-Unlock condition (vs. Work-to-Receive; $M = 73.31$, SD $= 24.03$; $\beta = 5.95$, SE $= 3.25$, $t(357) = 1.83$, $p = .068$, 95% CI $[-.44, 12.33]$) and in the Work-to-Unlock condition (vs. Goal-Based Lump Sum; $M = 76.24$, SD $= 22.66$; $\beta = 8.88$, SE $= 3.20$, $t(357) = 2.78$, $p = .006$, 95% CI $[2.59, 15.17]$). These results support our prediction that increased persistence with Work-to-Unlock rewards is due to a lower sense of accomplishment toward their reward accumulation goal, compared with the other two reward structures.

---

3   Excluding participants who did not try any workouts (2.5%), our results hold (Work-to-Unlock vs. Work-to-Receive: $\beta = 1.15$, SE $= .34$, $t(1036) = -3.35$, $p = .001$, 95% CI $[-1.83, -.48]$; Work-to-Unlock vs. Goal-Based Lump Sum: $\beta = -.97$, SE $= .34$, $t(1036) = -2.85$, $p = .004$, 95% CI $[-1.64, -.30]$).

STUDY 4: PERCEIVED ATTAINABILITY OF UNLOCKING REWARDS

In our final study, we examined a theoretically consistent boundary condition of the effect of work-to-unlock rewards on persistence: the length of the unlocking period. We suggest that consumers naturally set a goal based on the onset of rewards, using that as a reference point (Fishbach and Ferguson 2007). Reference points that do not seem attainable, such as those that are too far away, are perceived as more difficult and unlikely to be adopted (Carver and Scheier 1990; Locke and Latham 1990). Indeed, because consumer's motivation to reach a goal depends on both the expectancy of reaching the goal and the value of the goal (Atkinson 1957; Tolman 1955), consumers are likely less motivated to even start initiating goal pursuit when the expected likelihood of achieving a goal is low (Feather 1982; Louro et al. 2007). Thus, we expected that the effect of work-to-unlock rewards would be moderated by the length of the unlocking period (H3). We manipulated the length of the unlocking time period to examine perceived difficulty of the initial goal as a boundary of the effect of work-to-unlock rewards. Further, we examined how work-to-unlock rewards compare to a lump sum reward. Lump sum rewards by definition have the longest unlocking period (i.e., a more difficult goal). With lump sum rewards, people do not receive any rewards unless they complete the full task. We thus expected work-to-unlock rewards that have a relatively short unlocking period to outperform lump sum rewards.

Method

A total of 816 MTurk participants ($M_{\text{age}} = 35.28$; age range $= 18$–82; 337 males) participated for a $0.25 base payment. Participants were asked to type 100 word-sets, with each word-set consisting of three words. All participants learned their overall goal was to type all 100 word-sets. Participants were randomly assigned to one of four reward conditions (Work-to-Receive vs. Work-to-Unlock vs. Work-to-Unlock-Longer Unlocking Period vs. Lump Sum).

Participants in the Work-to-Receive condition learned they would receive $0.075 for every word-set typed. Participants in the Work-to-Unlock condition learned that they would receive no bonus for the first 25 word-sets typed (i.e., first $1/4$ of the task), at which point they would receive $0.01 for every word-set typed. Those in the Work-to-Unlock-Longer Unlocking Period condition learned they would receive no bonus for the first 75 word-sets typed (i.e., first $3/4$ of the task), at which point they would receive $0.03 for every word-set typed. Participants in the Lump Sum condition learned they would receive $0.75 if they typed all 100 word-sets. Thus, across conditions, we held

FIGURE 9

STUDY 4: WORDS TYPED AS FUNCTION OF REWARD STRUCTURE
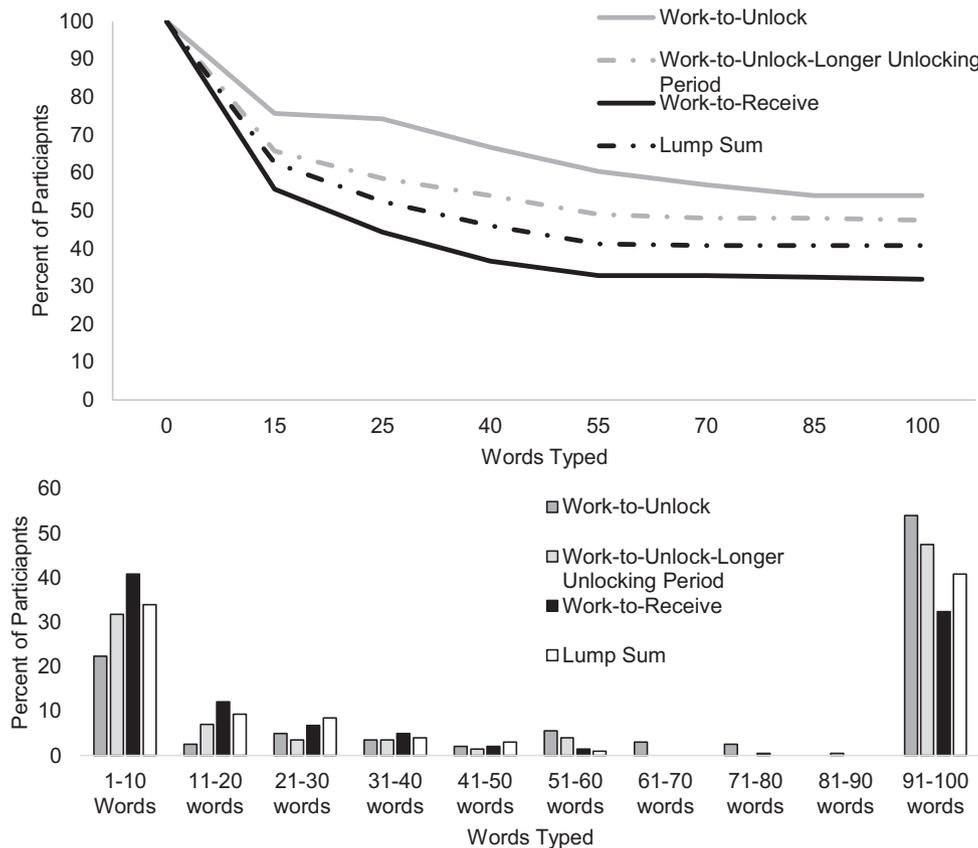
NOTE.—The top panel provides a histogram of number of words typed, and the bottom provides a line graph displaying when participants stopped typing words.

constant the maximum bonus participants could earn ($0.75).

Results

We first conducted a linear regression predicting total number of word-sets typed from three dummy variables representing the conditions, with the Work-to-Unlock condition as the reference group. As predicted, participants in the Work-to-Unlock condition typed significantly more word-sets ($M = 65.01$, $SD = 41.52$) compared to all three other conditions: Work-to-Receive ($M = 41.04$, $SD = 42.41$; $\beta = -23.96$, $SE = 4.26$, $t(812) = -5.63$, $p < .001$; 95% CI [-32.32, -15.61]), Work-to-Unlock-Longer Unlocking Period ($M = 55.05$, $SD = 44.68$; $\beta = -9.96$, $SE = 4.32$, $t(812) = -2.31$, $p = .021$; 95% CI [-18.44, -1.48]), and Lump Sum ($M = 48.67$, $SD = 44.10$; $\beta = -16.34$, $SE = 4.28$, $t(812) = -3.82$, $p < .001$; 95% CI [-24.73, -7.94]; figure 9).

In total, 43.4% of participants typed all 100 word-sets (Work-to-Unlock = 54.0% vs. Work-to-Receive = 31.9%; $\beta = -.92$, $SE = .21$, Wald = 20.09, $p < .001$ vs. Work-to-Unlock-Longer Unlocking Period = 47.5%; $\beta = -.26$, $SE = .20$, Wald = 1.68, $p = .195$; vs. Lump Sum = 40.8%; $\beta = -.53$, $SE = .20$, Wald = 7.06, $p = .008$). Our results hold with a Cox regression (Work-to-Unlock vs. Work-to-Receive: $\beta = .65$, exp (β)/Hazard Ratio = 1.92, $SE = .14$, $z = 4.88$, $p < .001$; Work-to-Unlock vs. Work-to-Unlock-Longer Unlocking Period: $\beta = .25$, exp (β)/Hazard Ratio = 1.29, $SE = .14$, $z = 1.76$, $p = .078$; Work-to-Unlock vs. Lump Sum: $\beta = .43$, exp (β)/Hazard Ratio = 1.53, $SE = .14$, $z = 3.10$, $p = .002$).

We conducted a similar regression with the Work-to-Unlock-Longer Unlocking Period condition as the reference group. Participants in the Work-to-Unlock-Longer Unlocking Period condition typed significantly more word-sets than those in the Work-to-Receive condition ($\beta = -14.00$, $SE = 4.28$, $t(812) = -3.27$, $p = .001$; 95% CI [-22.40, -5.61]), and directionally, but not significantly

more than those in the Lump Sum condition ($\beta = -6.38$, SE = 4.30, $t(812) = -1.48$, $p = .138$; 95% CI [-14.81, 2.06]). Thus, while Work-to-Unlock rewards with a longer work-to-unlock period are less motivating than those with a shorter work-to-unlock period, they are still more motivating than Work-to-Receive rewards.[4]

Discussion

This study conceptually replicated our main effect that people with work-to-unlock rewards persist more than those with work-to-receive rewards. This was true both when work-to-unlock rewards were more attainable (i.e., in that they were easier to reach) and when they were less attainable (i.e., when they took longer to reach). Further, this study demonstrates a theory-consistent boundary condition of our effect. If the work-to-unlock period is too long such that the initial goal seems more difficult, the effect of work-to-unlock rewards is reduced. This study further supports our theorizing that work-to-unlock rewards motivate consumers by encouraging them to set an initial attainable goal.

GENERAL DISCUSSION

Understanding how to motivate consumers to persist in goal-related activities is important and challenging. Throughout eight consequential studies involving real behavior, we shed light on a novel intervention to increase goal-directed motivation. We examined how modifying continuous rewards, by introducing a period in which people needed to first work-to-unlock them, can increase persistence relative to a standard continuous reward structure.

We find that work-to-unlock rewards increase persistence by naturally encouraging consumers to set a goal and then keep persisting through delayed reward distribution, leading them to feel less accomplishment toward earning rewards. Specifically, study 1a demonstrated that work-to-unlock rewards increase persistence compared with work-to-receive rewards in a longitudinal study examining a consequential health behavior, flossing. Study 1b replicated this effect for exercising and demonstrated that this effect holds even when the total available reward is lower in the work-to-unlock (vs. work-to-receive) condition. Study 1c revealed the effect was robust to nonmonetary rewards, and study 1d extended this to product evaluations, revealing that knowledge of the reward structure prior to the task is important.

Study 2 revealed that consumers with work-to-unlock rewards outperform those with work-to-receive rewards

with a mere goal. Although adding a mere goal to work-to-receive rewards increases initial motivation (in line with work-to-unlock rewards), it does not increase consumers' persistence after reaching the initial goal. Because the onset of rewards is delayed with work-to-unlock rewards, consumers feel a lower sense of accomplishment toward earning rewards when they reach their goal, which we confirmed in a posttest to study 3b. We theorize that this leads consumers to persist more than those with a mere goal and work-to-receive rewards. Due to this process, studies 3a and 3b demonstrate that work-to-unlock rewards outperform other reward structures (e.g., goal-based lump sum rewards) that encourage goal setting but that do not delay the distribution of rewards, and thus sense of achievement in earning them. Lastly, study 4 reveals that the length of the work-to-unlock period can reduce the effectiveness of work-to-unlock rewards, highlighting the need to set attainable goals initially.

Our analysis reveals two components that jointly contribute to the motivating power of work-to-unlock rewards. First, in phase 1, consumers are likely to set a goal to "unlock" rewards. That is, work-to-unlock rewards are motivating in part by causing people to set an initial earlier goal. Second, in phase 2, work-to-unlock rewards encourage continued engagement after reaching this threshold due to low achievement toward earning rewards. Both of these components are necessary for a reward structure to be motivating.

Theoretical and Practical Implications

This research makes contributions to the research on rewards and goals (Beshears et al. 2021; Charness and Gneezy 2009; Kivetz et al. 2006; Sharif and Shu 2017, 2021; Volpp et al. 2008), revealing a novel way to make continuous rewards more motivating by leveraging goal setting. We demonstrate that consumers are more motivated across a series of tasks (dental flossing, exercising, evaluating products, typing tasks, defining vocabulary words) with work-to-unlock rewards than with work-to-receive rewards and that this occurs even when those working to unlock rewards are working to receive a *smaller* reward amount per task.

The findings of this research have clear implications for companies helping consumers pursue goal-related actions to achieve their long-term goals (e.g., fitness, weight loss, or language learning companies). These organizations have a difficult challenge in that they have to motivate consumers to complete slightly unpleasant tasks (e.g., workout, study vocabulary cards, diet). These companies could harness work-to-unlock rewards to encourage consumers to adhere to the program (i.e., discounts on membership, badges, points). As a result, consumers would be more likely to make progress on actions that advance long-term goals (e.g., become more fit, lose weight, learn a

---

4   We find similar results when using a Cox regression for survival analysis (Work-to-Unlock-Longer Unlocking Period vs. Work-to-Receive: $\beta = .40$, Hazard Ratio = 1.49, SE = .13, $z = 3.11$, $p = .002$; Work-to-Unlock-Longer Unlocking Period vs. Lump Sum: $\beta = .18$, Hazard Ratio = 1.19, SE = .13, $z = 1.32$, $p = .19$).

language), leading them to be more satisfied with the program. Further, as we find that work-to-unlock rewards are more effective than work-to-receive rewards even when the total possible reward magnitude is lower, companies can save money by offering work-to-unlock rewards.

With regard to the length of the unlocking period, study 4 revealed that a longer unlocking period (e.g., 75% of the task) was less motivating than a shorter unlocking period (e.g., 25% of the task). Our studies suggest that the optimal unlocking period is one that creates an initial goal that is both (1) motivating (i.e., people strive to reach it) and (2) attainable (i.e., people see the threshold as feasible for them to reach). A goal that is too easy is unlikely to motivate people, above and beyond what those with work-to-receive rewards would complete. However, at the same time a goal that is too hard may not be adopted because it is not perceived as a feasible target. Indeed, striving toward an attainable goal is a major theme within the goal pursuit literature (Locke and Latham 1990). To determine the optimal threshold, practitioners should consider what an attainable goal is in the given context. As we previously discussed, the value of the task will also determine how much people persist, regardless of the reward structure. Thus, for especially enjoyable tasks, it is likely that a slightly longer unlocking period could be motivating; however, for a less enjoyable task, a shorter unlocking period could be motivating.

An effective reward program needs to motivate people but also needs to be one that people are interested in signing up for. Our research began to tackle this question, comparing interest in signing-up for a reward program that offered work-to-unlock (vs. work-to-receive) rewards. However, future research should further examine how sign-up rates are affected by reward structure. In our studies, although not significant, we find a directional disadvantage of signing up for a program with a work-to-unlock (vs. work-to-receive) reward schedule. Future research should examine the likelihood of signing up for these different programs in a field experiment. Unlike in our controlled experiments, in the real world, reward programs may have a harder time attracting people's attention, and consumers may be more likely to compare reward structures across programs available to them in the marketplace. These factors may differentially affect sign-up rates for work-to-unlock versus work-to-receive reward programs.

Future research should also examine the downstream consequences of work-to-unlock rewards. For example, while we demonstrate that consumers are more motivated while being rewarded with work-to-unlock rewards, how do work-to-unlock rewards affect task re-engagement and retention? Are consumers more versus less likely to complete the task again; and what if the reward is removed?

Overall, this research demonstrates the motivating benefit of work-to-unlock (vs. work-to-receive) rewards. As rewards are widely used in many consequential domains, further exploration into how companies can leverage goal setting in rewards is a ripe area for future research.

DATA COLLECTION INFORMATION

REFERENCES

Acland, Dan and Matthew R. Levy (2015), "Naiveté, Projection Bias, and Habit Formation in Gym Attendance," *Management Science*, 61 (1), 146–60.

Allen, Eric J., Patricia M. Dechow, Devin G. Pope, and George Wu (2017), "Reference- Dependent Preferences: Evidence from Marathon Runners," *Management Science*, 63 (6), 1657–72.

Amato-McCoy, Deena. (2017), "Survey: Shopping in Stores a 'Chore' for Many Consumers," https://chainstoreage.com/technology/survey-shopping-stores-chore-many-consumers.

Amir, On and Dan Ariely (2008), "Resting on Laurels: The Effects of Discrete Progress Markers as Subgoals on Task Performance and Preferences," *Journal of Experimental Psychology. Learning, Memory, and Cognition*, 34 (5), 1158–71.

Arkes, Hal R. and Catherine Blumer (1985), "The Psychology of Sunk Cost," *Organizational Behavior and Human Decision Processes*, 35 (1), 124–40.

Atkinson, John W. (1957), "Motivational Determinants of Risk-Taking Behavior," *Psychological Review*, 64 (6, Pt.1), 359–72.

Beshears, John, Hae Nim Lee, Katherine L. Milkman, Robert Mislavsky, and Jessica Wisdom (2021), "Creating Exercise Habits Using Incentives: The Trade-off Between Flexibility and Routinization," *Management Science*, 67 (7), 4139–71.

Bolton, Ruth N., P. K. Kannan, and Matthew Bramlett (2000), "Implications of Loyalty Program Membership and Service Experiences for Customer Retention and Value," *Journal of the Academy of Marketing Science*, 28 (1), 95–108.

Brady, Diane. (2000), "Why Service Stinks," *BusinessWeek*, October 23, http://www.businessweek.com/archives/2000/b3704001.arc.htm.

Carver, Charles S. and Michael F. Scheier (1990), "Origins and Functions of Positive and Negative Affect: A Control-Process View," *Psychological Review*, 97 (1), 19–35.

Charness, Gary and Uri Gneezy (2009), "Incentives to Exercise," *Econometrica*, 77 (3), 909–31.

Chung, Doug and Das Narayandas (2017), "Incentives Versus Reciprocity: Insights From a Field Experiment," *Journal of Marketing Research*, 54 (4), 511–24.

DellaVigna, Stefano and Devin Pope (2018), "What Motivates Effort? Evidence and Expert Forecasts," *The Review of Economic Studies*, 85 (2), 1029–69.

Dreze, Xavier and Joseph. Nunes (2009), "Feeling Superior: The Impact of Loyalty Program Structure on Consumers' Perceptions of Status," *Journal of Consumer Research*, 35 (6), 890–905.

Feather, Norman T. (1982), *Expectations and Actions: Expectancy-Value Models in Psychology*, Hillsdale, NJ: Lawrence Erlbaum Associates Incorporated.

Ferster, Charles B. and Burrhus Frederic Skinner (1957), *Schedules of Reinforcement*, New York: Appleton-Century-Crofts.

Fishbach, Ayelet and Melissa J. Ferguson (2007), "The Goal Construct in Social Psychology." in *Social Psychology: Handbook of Basic Principles*, ed. A. W. Kruglanski and E. T. Higgins, New York: The Guilford Press, 490–515.

Fishbach, Ayelet and Ravi Dhar (2005), "Goals as Excuses or Guides: The Liberating Effect of Perceived Goal Progress on Choice," *Journal of Consumer Research*, 32 (3), 370–7.

Fishbach, Ayelet, Ravi Dhar, and Ying Zhang (2006), "Subgoals as Substitutes or Complements: The Role of Goal Accessibility," *Journal of Personality and Social Psychology*, 91 (2), 232–42.

Fleming, Eleanor B., Duong Nguyen, Joseph Afful, Margaret D. Carroll, and Phillip D. Woods (2018), "Prevalence of Daily Flossing among Adults by Selected Risk Factors for Periodontal Disease—United States, 2011–2014," *Journal of Periodontology*, 89 (8), 933–9.

Gershon, Rachel, Cynthia Cryder, and Leslie K. John (2020), "Why Prosocial Referral Incentives Work: The Interplay of Reputational Benefits and Action Costs," *Journal of Marketing Research*, 57 (1), 156–72.

Gneezy, Uri, Stephan Meier, and Pedro Rey-Biel (2011), "When and Why Incentives (Don't) Work to Modify Behavior," *Journal of Economic Perspectives*, 25 (4), 191–210.

Gwinner, Kevin P., Dwayne D. Gremler, and Mary Jo Bitner (1998), "Relational Benefits in Services Industries: The Customer's Perspective," *Journal of the Academy of Marketing Science*, 26 (2), 101–14.

Heath, Chip, Richard P. Larrick, and George Wu (1999), "Goals as Reference Points," *Cognitive Psychology*, 38 (1), 79–109.

Hsee, Christopher K. (1996), "The Evaluability Hypothesis: An Explanation for Preference Reversals Between Joint and Separate Evaluations of Alternatives," *Organizational Behavior and Human Decision Processes*, 67 (3), 247–57.

Hsee, Christopher K. and France Leclerc (1998), "Will Products Look More Attractive When Presented Separately or Together?," *Journal of Consumer Research*, 25 (2), 175–86.

Huang, Szu-Chi, Liyin Jin, and Ying Zhang (2017), "Step by Step: Sub-Goals as a Source of Motivation," *Organizational Behavior and Human Decision Processes*, 141, 1–15.

International Health, Racquet & Sportsclub Association (IHRSA) (2019), "The 2019 IHRSA Global Report," https://www.ihrsa.org/publications/the-2019- ihrsaglobal-report/.

Jain, Sanjay (2012), "Self-Control and Incentives: An Analysis of Multiperiod Quota Plans," *Marketing Science*, 31 (5), 855–69.

Jeffreys, Harold (1998), *The Theory of Probability*, Oxford: OUP Oxford.

John, Leslie K., George Loewenstein, Andrea B. Troxel, Laurie Norton, Jennifer E. Fassbender, and Kevin G. Volpp (2011), "Financial Incentives for Extended Weight Loss: A Randomized, Controlled Trial," *Journal of General Internal Medicine*, 26 (6), 621–6.

Kahneman, Daniel and Amos Tversky (1979), "Prospect Theory: An Analysis of Decision under Risk," *Econometrica*, 47 (2), 263–91.

Kivetz, Ran and Itamar Simonson (2003), "The Idiosyncratic Fit Heuristic: Effort Advantage as a Determinant of Consumer Response to Loyalty Programs," *Journal of Marketing Research*, 40 (4), 454–67.

Kivetz, Ran, Oleg Urminsky, and Yuhang Zheng (2006), "The Goal-Gradient Hypothesis Resurrected: Purchase Acceleration, Illusionary Goal Progress, and Customer Retention," *Journal of Marketing Research*, 43 (1), 39–58.

Lacey, Russell, Jaebeom Suh, and Robert M. Morgan (2007), "Differential Effects of Preferential Treatment Levels on Relational Outcomes," *Journal of Service Research*, 9 (3), 241–56.

Lewis, Michael (2004), "The Influence of Loyalty Programs and Short-Term Promotions on Customer Retention," *Journal of Marketing Research*, 41 (3), 281–92.

Locke, Edwin A. and Gary P. Latham (1990), *A Theory of Goal Setting and Task Performance*. Englewood Cliffs, NJ: Prentice Hall.

Loewenstein, George F. (1988), "Frames of Mind in Intertemporal Choice," *Management Science*, 34 (2), 200–14.

Loewenstein, George and Drazen Prelec (1992), "Anomalies in Intertemporal Choice: Evidence and an Interpretation," *The Quarterly Journal of Economics*, 107 (2), 573–97.

Louro, Maria J., Rik Pieters, and Marcel Zeelenberg (2007), "Dynamics of Multiple-Goal Pursuit," *Journal of Personality and Social Psychology*, 93 (2), 174–93.

Luce, Mary Frances, James R. Bettman, and John W. Payne (1997), "Choice Processing in Emotionally Difficult Decisions," *Journal of Experimental Psychology. Learning, Memory, and Cognition*, 23 (2), 384–405.

McCall, Michael and Clay Voorhees (2010), "The Drivers of Loyalty Program Success: An Organizing Framework and Research Agenda," *Cornell Hospitality Quarterly*, 51 (1), 35–52.

Niv, Yael, Daphna Joel, and Peter Dayan (2006), "A Normative Perspective on Motivation," *Trends in Cognitive Sciences*, 10 (8), 375–81.

Nunes, Joseph C. and Xavier Dreze (2006), "The Endowed Progress Effect: How Artificial Advancement Increases Effort," *Journal of Consumer Research*, 32 (4), 504–12.

Oyer, P (1998), "Fiscal Year Ends and Nonlinear Incentive Contracts: The Effect on Business Seasonality," *The Quarterly Journal of Economics*, 113 (1), 149–85.

Rothman, A. J. (2000), "Toward a Theory-Based Analysis of Behavioral Maintenance," *Health Psychology: Official Journal of the Division of Health Psychology, American Psychological Association*, 19 (1S), 64–9.

Rothman, A. J., Baldwin, A. S., Hertel, A. W., and Fuglestad. P. T. (2004), "Disentangling Behavioral Initiation and Behavioral Maintenance," in *Handbook of Self-Regulation. Research, Theory, and Applications*, ed. K. D. Vohs and R. F. Baumeister, New York, NY: Guilford Press, 130–48.

Ryan, Richard M., and Edward L. Deci (2000), "The Darker and Brighter Sides of Human Existence: Basic Psychological

Needs as a Unifying Concept," *Psychological Inquiry*, 11 (4), 319–38.

Schüz, Benjamin, Amelie U. Wiedemann, Natalie Mallach, and Urte Scholz (2009), "Effects of a Short Behavioural Intervention for Dental Flossing: Randomized-Controlled Trial on Planning When, Where and How," *Journal of Clinical Periodontology*, 36 (6), 498–505.

Sharif, Marissa A. and Daniel M. Oppenheimer (2016), "The Effect of Relative Encoding on Memory-Based Judgments," *Psychological Science*, 27 (8), 1136–45.

——, (2021), "The Effect of Categories on Relative Encoding Biases in Memory-Based Judgments," *Organizational Behavior and Human Decision Processes*, 162, 1–8.

Sharif, Marissa A. and Kaitlin Woolley (2020), "The Effect of Categorization on Goal Progress Perceptions and Motivation," *Journal of Consumer Research*, 47 (4), 608–30.

Sharif, Marissa A. and Suzanne B. Shu (2017), "The Benefits of Emergency Reserves: Greater Preference and Persistence for Goals That Have Slack with a Cost," *Journal of Marketing Research*, 54 (3), 495–509.

——, (2021), "Nudging Persistence After Failure Through Emergency Reserves," *Organizational Behavior and Human Decision Processes*, 163, 17–29.

Shen, Luxi, Ayelet Fishbach, and Christopher K. Hsee (2015), "The Motivating-Uncertainty Effect: Uncertainty Increases Resource Investment in the Process of Reward Pursuit," *Journal of Consumer Research*, 41 (5), 1301–15.

Shen, Luxi and Christopher K. Hsee (2017), "Numerical Nudging: Using an Accelerating Score to Enhance Performance," *Psychological Science*, 28 (8), 1077–86.

Soman, Dilip and Amar Cheema (2004), "When Goals Are Counterproductive: The Effects of Violation of a Behavioral Goal on Subsequent Performance," *Journal of Consumer Research*, 31 (1), 52–62.

Tolman, Edward C. (1955), "Principles of Performance," *Psychological Review*, 62 (5), 315–26.

Urminsky, Oleg and Gal Zauberman. (2016), "The Psychology of Intertemporal Preferences," in *Blackwell Handbook of Judgment and Decision Making*, ed. G. Keren and G. Wu, Chichester, West Sussex: John Wiley and Sons, 141–81.

Volpp, Kevin G., Leslie K. John, Andrea B. Troxel, Laurie Norton, Jennifer Fassbender, and George Loewenstein (2008), "Financial Incentive–Based Approaches for Weight Loss: A Randomized Trial," *JAMA*, 300 (22), 2631–7.

Wallace, Scott G. and Jordan Etkin (2018), "How Goal Specificity Shapes Motivation: A Reference Points Perspective," *Journal of Consumer Research*, 44 (5), 1033–51.

Woolley, Kaitlin and Ayelet Fishbach (2017), "Immediate Rewards Predict Adherence to Long-Term Goals," *Personality & Social Psychology Bulletin*, 43 (2), 151–62.

Woolley, Kaitlin and Marissa A. Sharif (2021), "Incentives Increase Relative Positivity of Review Content and Enjoyment of Review Writing," *Journal of Marketing Research*, 58 (3), 539–58.

Zhang, Yan and Leilei Gao (2016), "Wanting Ever More: Acquisition Procedure Motivates Continued Reward Acquisition," *Journal of Consumer Research*, 43 (2), 230–45.