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# For the Fun of It: Harnessing Immediate Rewards to Increase Persistence in Long-Term Goals

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Pursuing personal goals for delayed rewards (e.g., exercising to improve health) often provides consumers with immediate rewards (e.g., a fun workout) in addition to the delayed rewards they receive. With regard to health and academic goals, we find that attending to the immediate rewards of health and academic activities increases persistence in these activities to a greater extent than attending to delayed rewards, even though these activities are selected for the delayed rewards they provide. Specifically, bringing immediate rewards into activity choice—for example, having participants choose the most enjoyable rather than the most useful exercise or the tastier rather than healthier bag of carrots—increases persistence and consumption. Similarly, adding external immediate rewards to activity pursuit—for example, playing music in a high school classroom—increases persistence. Across these studies, immediate rewards are stronger predictors of activity persistence than delayed rewards. This research suggests that marketers and consumers can harness immediate rewards to increase persistence in long-term goals.

*Keywords*: motivation, goals, immediate/delayed rewards, self-regulation, persistence

Imagine a consumer with the long-term goal of becoming healthier by exercising. She can motivate herself to continue a workout by focusing on the desired delayed outcome of her workout, which is getting in shape, or she can focus on the immediate reward she achieves from pursuing her exercise goal, which is clearing her mind. When pursuing this long-term health goal, which strategy will best motivate her to persist in a workout? While some research suggests paying attention to delayed rewards facilitates goal pursuit (Kuhl and Beckmann 1985; Mischel, Shoda, and Rodriguez 1989), we argue that attending to immediate positive outcomes of long-term goals might increase persistence in these goals to an even greater extent.

In what follows, we provide an overview of immediate and delayed rewards inherent in pursuing consumer goals. Although both immediate and delayed rewards motivate action (e.g., health and taste motivate fruit consumption, and the potential to get in shape and clear one's mind motivate working out), self-control research typically assumes that attending to delayed outcomes is the key to securing goal pursuit. We consider an alternative approach. We propose that the immediate rewards of long-term goals often go unnoticed, and yet they can improve the experience during goal pursuit. Therefore attending to these rewards and selecting means based on immediate rewards can increase persistence in long-term goals. Specifically, we test three predictions: first, bringing immediate rewards into activity pursuit increases persistence in long-term goals; second,

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attending to a goal's immediate rewards increases persistence compared with attending to a goal's delayed rewards; and third, immediate rewards more strongly predict persistence in long-term goals than delayed rewards. Taken together, these predictions test the overall hypothesis that consumers can harness immediate rewards to secure the pursuit of delayed goals. We further discuss how an intervention based on an immediate-rewards focus can serve to decrease the likelihood of encountering a self-control conflict.

## THEORETICAL BACKGROUND

Generally speaking, people receive two categories of benefits when pursuing goals: immediate rewards that materialize while pursuing the activity (e.g., the immediate positive experience), and delayed rewards that materialize at a later point in time and are an outcome of pursuit (McClure et al. 2004; Mischel et al. 1989). For example, working out offers both immediate rewards (e.g., a fun or relaxing experience) and delayed rewards (e.g., improved health). This distinction is further similar to that between intrinsic and extrinsic incentives (Andrews and Smith 1996; Burroughs et al. 2011; Deci and Ryan 1985; Heath 1999; Laran and Janiszewski 2011) and experiential and instrumental benefits (Fishbach and Choi 2012) because immediate rewards tend to be intrinsic and experiential while delayed rewards tend to be extrinsic and instrumental. However, in contrast with the intrinsic-extrinsic distinction, immediate rewards include both rewards that are internal to the activity (e.g., enjoying a workout), as well as rewards that are external to the activity (e.g., enjoying the music during a workout). As long as the reward is delivered while pursuing the activity, it is considered immediate.

Self-control research has addressed the conflict between activities that offer either delayed or immediate rewards (e.g., eating healthy food that tastes bad vs. tasty food that is unhealthy; Ainslie 2001; Fishbach and Converse 2010; Hoch and Loewenstein 1991; Hofmann, Friese, and Strack 2009; Khan and Dhar 2006; Wertenbroch 1998). Whereas such conflicts are common and pose a dilemma between collecting immediate versus delayed rewards, it is also the case that most activities pursued for their long-term goals offer both delayed and immediate rewards simultaneously, at least to some extent. For example, even though achieving delayed rewards motivates initiation of a workout, once at the gym, a person achieves both immediate rewards from working out (e.g., a clear mind) and delayed rewards as a result of the workout (e.g., weight loss). Similarly, a person trying to eat healthily for long-term benefits will often consume healthy foods that taste good. Thus whereas two choice options may pose a trade-off between these rewards, each option usually contains to some extent both benefits. We accordingly ask whether a focus on immediate rewards motivates persistence in an activity that is first and foremost pursued for the positive delayed outcomes the activity provides.

Prior self-control research finds that attention to delayed outcomes motivates goal pursuit by rendering the long-term goal more important (Fishbach and Converse 2010; Fishbach, Friedman, and Kruglanski 2003). Because goal-related activities are selected for the delayed outcomes that they offer, it seems logical that attention to these delayed outcomes will motivate pursuit of the activities. In addition, beyond attention to rewards, mere attention to the goal's end state increases motivation by focusing people on the discrepancy between their current state and the end state (Carver and Scheier 1998; Higgins 1987; Kivetz, Urminsky, and Zheng 2006; Locke and Latham 1990).

But can increasing attention to immediate rewards be helpful too, potentially even more so than attending to the delayed rewards of a long-term goal? We predict that attention to the immediate rewards received from pursuing a long-term goal could facilitate persistence in the goal-related activity more than attention to delayed rewards, and despite the fact that the activity is primarily engaged in for the delayed rewards it provides. That is, because immediate rewards are important to people in the present, when they pursue an activity, focusing on these often ignored immediate rewards could improve people's experience and thus increase their persistence during pursuit. Specifically, to the extent that people are already aware of the long-term benefits of their actions, focusing on these delayed rewards would not be very useful. In contrast, through an additive process, a focus on the immediate rewards that otherwise go unnoticed, or bringing immediate rewards into goal pursuit, would increase persistence in the long-term goal.

Consistent with this analysis, previous research has found that people judge immediate rewards and intrinsic incentives as more attractive in the present than in advance (Ainslie 2001; Hoch and Loewenstein 1991; Rachlin 2000; Woolley and Fishbach 2015). In addition, research on the empathy gap demonstrated that people underestimate how strong their experience will be when making predictions in advance (e.g., how tired they would be; Nordgren, van der Pligt, and van Harreveld 2006). Based on that previous research, one reason that people do not spontaneously bring in or attend to immediate rewards when planning pursuit of long-term goals is that they underestimate how much they would care for receiving immediate rewards. That is, because their activity's main purpose is to achieve delayed rewards and because people do not expect to care very much for immediate rewards, they do not bring these rewards to the activity or to their mind. However, given that immediate rewards are important during pursuit, people's decision to persist in an activity may increase if they consider the immediate rewards they can receive by pursuing a long-term goal.

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Our prediction is further consistent with work on intrinsic motivation. Although this work typically does not compare a focus on intrinsic versus extrinsic benefits, it shows that intrinsic benefits matter for persistence. Positive feelings provide an intrinsic reward that creates an incentive (Berridge 2001; Bindra 1974) and increases motivation (Custers and Aarts 2005; Erez and Isen 2002; Ferguson and Bargh 2004). Positive feelings during pursuit should therefore matter in influencing goal persistence. Indeed, intrinsic motives for attending West Point increased the likelihood of a cadet graduating and becoming a commissioned officer (Wrzesniewski et al. 2014). Moreover, intrinsic motivation has been linked to improved academic performance in education research (Deci et al. 1991; Lepper, Corpus, and Iyengar 2005; Pintrich and De Groot 1990). For example, students who reported being more intrinsically motivated were less likely to drop out of a college-level course (Vallerand and Bissonnette 1992) and, outside of education, engaging in strategies that boost intrinsic motivation and interest in a useful, but boring task, increased task persistence (Sansone et al. 1992). Intrinsic rewards have been found to play a role in consumers' goal persistence as well. Indeed, Laran and Janiszewski (2011) demonstrated that construing a behavior as fun, rather than as work, replenished available resources to exert self-control in the future. Building on the notion that people can construe their actions as delivering immediate (fun) or delayed (work) rewards, we examine, for actions that are motivated by delayed rewards, whether a focus on the actions' immediate rewards increases consumers' persistence via an additive process.

We assume that when focusing on immediate rewards, it is less likely that pursuing long-term goals poses a self-control conflict since people are engaging in an immediately rewarding activity. Once a long-term goal is identified, choosing a specific course of action based on immediate rewards, and attending to those rewards during pursuit, could thus increase persistence with minimal or no mental cost. For example, a student who needs to study for an exam could increase persistence by attending to what he enjoys about studying, as long as some immediate rewards for studying exist (e.g., the materials are at least somewhat interesting).

More broadly, our research joins other work looking to enhance consumer well-being and quality of life (Block et al. 2011; Dahl et al. 2014; Mick 2006) by studying a subtle and simple intervention that can help people more easily pursue a range of long-term goals. Specifically, we offer an intervention for consumers to facilitate persistence in long-term goals in a way that makes it less likely that they will encounter a self-control conflict. Whereas people are primarily motivated to pursue long-term goal activities based on the delayed rewards they can receive, we suggest that harnessing immediate rewards can increase persistence in the goal.

## PRESENT RESEARCH

We assume that immediate rewards are often present in activities that are primarily pursued for delayed rewards and study how harnessing these immediate rewards can increase persistence in goals people care about achieving. Specifically, we make three predictions:

> **H1:** When pursuing long-term goals, bringing immediate rewards into the activity results in greater goal persistence.

For example, we predict choosing an activity that serves a long-term goal based on the immediate rewards the activity offers will be effective in increasing persistence. We similarly predict that adding immediate rewards to the pursuit of a long-term goal (e.g., adding music or snacks to studying) would be useful in increasing persistence.

> **H2:** When pursuing long-term goals, directing attention to the goal's existing immediate rewards increases persistence compared with directing attention to the goal's delayed rewards.

According to hypothesis 2, during pursuit of a long-term goal, attention to the activity's immediate rewards is sufficient to increase motivation in the absence of an intervention that increases the actual immediate rewards present in pursuit.

> **H3:** When pursuing long-term goals, the goal's immediate rewards more strongly predict persistence than the goal's delayed rewards.

Thus according to hypothesis 3, the subjective experience of immediate rewards (e.g., the healthy food is tasty) will predict adherence to a long-term goal more than the experience of delayed rewards (e.g., the healthy food is healthy).

To test our first hypothesis, study 1 examines whether gym-goers bringing immediate (vs. delayed) rewards into their workout selection persist longer in their workout. We complement this study with a posttest that asks whether people intuitively motivate themselves to persist in a workout by using immediate rewards, predicting that they would not. We next examine our second hypothesis, whether attending to immediate rewards increases people's consumption of healthy food, compared with a delayed rewards or neutral focus (study 2). Study 3 further examines the presence of immediate rewards as a moderator of this effect; those attending to immediate (vs. delayed) rewards should consume more of a healthy food only when doing so enables a positive experience. Both studies 2 and 3 also provide evidence for hypothesis 3 that, when pursuing long-term goals, the immediate rewards received during goal pursuit serve as stronger predictors of persistence than the goal's delayed rewards.

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We return to hypothesis 1 in our final study; in study 4 we test whether bringing immediate (but external) rewards into the pursuit of an in-class school assignment increases activity persistence for high school students. This study also adds support for the prediction that immediate rewards received during pursuit of a school assignment are a stronger predictor of persistence in the assignment than delayed rewards (hypothesis 3). We summarize our studies and main findings in table 1.

## STUDY 1: CHOOSING AN EXERCISE BASED ON IMMEDIATE REWARDS INCREASES PERSISTENCE

In study 1, we test whether bringing immediate rewards into pursuit of a goal-related activity increases persistence (hypothesis 1). In the context of a weightlifting exercise, participants chose a workout that they found enjoyable (in the immediate rewards condition) or valuable (in the delayed rewards condition) from a set of equally effortful workouts. We predicted that incorporating immediate rewards into choice would lead gym-goers to persist more in a workout, completing a greater number of sets of a weightlifting exercise than those bringing in delayed rewards.

We first confirmed that people primarily go to the gym for the delayed rewards they receive rather than for immediate rewards. We approached 40 gym-goers in a campus gym (16 female; $M_{age} = 22.15$, SD = 4.50) and asked them to list "The main reason why you go to the gym?" (1 = To receive short-term benefits, 2 = To receive long-term benefits) and "How many days a week do you go to the gym?" ($M = 3.80$ days, SD = 1.42). Two participants selected both options and were excluded from analysis. As expected, we find that a majority of gym-goers (89.5%, $n = 34$) primarily exercise in order to receive delayed rewards, which is greater than chance ($z = 4.71$, $p < .001$). Having confirmed that gym attendees primarily exercise to receive delayed rewards, we move on to test our main hypothesis.

### Method

*Participants.* An experimenter approached 61 gym-goers in the weight room of a campus gym and asked them to complete a study in return for a granola bar (12 females; we did not measure age).

*Procedure.* This study employed a 2 (reward focus: immediate vs. delayed) between-subjects design. All participants received a set of six exercises accompanied by photos and chose one to pursue. The exercises all involved weights and were selected to be similar in difficulty by a gym expert familiar with all of the workouts. Participants had a choice among the following exercises: shoulder press, bicep curl, triceps bench press, dead lift, lunge with weights, and squat with weights.

In the immediate-rewards focus, an experimenter gave participants a list of these six exercises and instructed them to "Choose from this list an exercise you plan to do that you most enjoy doing, one that you like to do more than the other options. You'll be asked to do this workout so it's important you choose one you enjoy and one that is in your workout routine." An experimenter gave participants in the delayed-rewards focus the same list and instructed them to "Choose from this list an exercise you plan to do that you find most useful for your health goals compared to the other options. You'll be asked to do this workout so it's important you choose one you find useful and effective and one that is in your workout routine." After participants selected a workout, an experimenter told them, "As part of the study we want you to persist on this exercise for as long as you want." They then started their exercise.

We were interested in how long participants persisted in their chosen workout, specifically, how many total sets of their workout they completed and how many total repetitions they completed during their workout. Another research assistant surreptitiously recorded (1) the number of sets of the exercise participants completed and (2) the number of repetitions (reps) per set they completed (e.g., someone doing two sets of 15 reps lifts weights 15 consecutive times, takes a short break, then lifts weights 15 more times). We computed a measure for total reps by summing the number of reps for each set for a participant, and we

**TABLE 1**

SUMMARY OF STUDIES AND MAIN FINDINGS

| Study | Hypothesis | Long-term goal | Main finding |
|---|---|---|---|
| Study 1: | 1 | Exercise | Choosing based on immediate (vs. delayed) rewards increases persistence in a workout. |
| Study 2: | 2 and 3 | Healthy eating | Attention to immediate (vs. delayed) rewards while eating healthy food (carrots) increases consumption. |
| Study 3: | 2 and 3 | Healthy eating | Attention to immediate (vs. delayed) rewards while eating increases consumption of a healthy food only when immediate benefits exist (apples vs. spinach). |
| Study 4: | 1 and 3 | Academics | Adding immediate rewards (vs. control) increases persistence in schoolwork among high school students. |

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computed a measure of average reps per set by dividing the total number of reps by the total number of sets. Weightlifters typically lift weight a specific number of times for each set, usually between 5 and 15 repetitions. Participants in our study fell within this range, completing a similar number of reps across conditions ($M = 8.88$, $SD = 3.78$). To ensure gym-goers were not persisting longer because they were doing less work, we also recorded (1) how much weight they used when exercising and (2) how many minutes they spent on their exercise. A research assistant coded gender; participants were not asked follow-up questions or demographics.

## Results and Discussion

We first analyzed exercise selection. As predicted, there was no difference between conditions in choice of exercise ($\chi^2(5, N = 61) = 6.09$, $p = .298$), suggesting participants chose similar workouts when choosing for either immediate or delayed rewards. Overall, 34.4% ($n = 21$) chose the bicep curl, 21.3% ($n = 13$) chose the triceps bench press, 19.7% ($n = 12$) chose the shoulder press, 13.1% ($n = 8$) chose the squat with weights, 6.6% ($n = 4$) chose the dead lift, and 4.9% ($n = 3$) chose the lunge with weights.

We next examined our main variable of interest, the total number of sets participants completed of their chosen workout. As predicted, we find that participants completed a greater number of sets under an immediate-rewards focus than under a delayed-rewards focus ($M_{immediate} = 3.74$, $SD = 2.46$ vs. $M_{delayed} = 2.70$, $SD = 1.21$; $t(43.96) = 2.11$, $p = .041$). By completing more sets, participants in the immediate-rewards condition did not compromise the number of reps for each set, which tends to be fixed and was indeed similar between conditions ($M_{immediate} = 9.29$, $SD = 3.40$ vs. $M_{delayed} = 8.45$, $SD = 4.15$; $t < 1$). As a result, we find the predicted effect that those with an immediate-rewards focus completed a greater number of total reps than those with a delayed-rewards focus ($M_{immediate} = 29.00$, $SD = 16.93$ vs. $M_{delayed} = 18.90$, $SD = 9.66$; $t(47.97) = 2.87$, $p = .006$).

It was possible that participants focusing on immediate rewards completed more sets by working less hard on each of them. Against this alternative, as predicted, there was no difference between conditions in the amount of weight participants used while exercising ($M_{immediate} = 48.50$, $SD = 31.10$ vs. $M_{delayed} = 49.17$, $SD = 39.28$; $t < 1$) or in the number of minutes they persisted ($M_{immediate} = 5.78$, $SD = 5.61$ vs. $M_{delayed} = 3.94$, $SD = 3.68$; $t(59) = 1.51$, $p = .137$), suggesting participants focusing on immediate rewards did not lift weight more quickly nor did they work more slowly.

## Posttest 1: Lay Intuitions for Motivating a Workout

Do people know that having an enjoyable workout is important for their ability to persist in this workout (as we find)? In a follow-up test we examined how people actually motivate themselves when working out. A total of 80 Amazon Mechanical Turk (MTurk) workers (41 females; $M_{age} = 34.39$, $SD = 10.36$) took a short survey in exchange for $0.10. We first asked participants to "Provide a short description of how you plan to motivate yourself the next time you exercise." Participants then indicated how motivated they would be to work out if they (1) "Were choosing an activity that you most enjoyed doing, one that you liked to do more than other exercises" and (2) "Were choosing an activity that you found most useful for your health goals, one that you found more effective than other exercises" (0 = Not motivated, 100 = Very motivated). Lastly, we asked people how often they worked out (1 = Very rarely, 7 = Very often).

Two independent coders rated participants' responses to the open-ended question of how they would motivate themselves the next time they exercised (−1 = Focused on delayed rewards, 1 = Focused on immediate rewards, 0 = Neutral or unclear). The coders agreed on 82.5% ($n = 66$) of the descriptions, and a third coder categorized the 14 cases where the original coders disagreed. Examples of focusing on delayed rewards included "Remind myself that I have set a goal of running another half marathon" and "I will think about the benefits of achieving the ultimate goal of being more fit and healthy." Examples of focusing on immediate rewards included "I make exercise fun. Instead of going to the gym, I go on a long hike or bike ride. This way, it is easy to work out" and "I listen to some motivational upbeat music while exercising."

We find a significant difference between the frequency of the three motivations (immediate vs. delayed vs. neutral; $\chi^2(2, N = 80) = 50.58$, $p < .001$; figure 1). As predicted, a majority (68.75%, $n = 55$) of participants indicated that they would focus on delayed rewards to motivate themselves, whereas only 26.25% ($n = 21$) indicated they would focus on immediate rewards, with 5.00% ($n = 4$) reporting something neutral or unrelated (e.g., "I don't exercise"). Thus most participants indicated they would focus on delayed rewards rather than immediate rewards to motivate their pursuit of an exercise goal. There was no difference in how much people exercised based on how they chose to motivate themselves ($M_{immediate} = 4.10$; $M_{delayed} = 4.13$; $M_{neutral} = 4.50$; $F < 1$). Although in study 1 we find that an immediate-rewards focus increased persistence in a workout over a delayed-rewards focus, gym-goers do not appear to be using an immediate-rewards focus to motivate themselves when working out. This suggests that shifting people to focus on immediate rewards, rather than delayed ones, could be a useful recommendation for increasing workout persistence.

We next tested the extent to which participants expected to be motivated by a given immediate-rewards focus (i.e., imagining they chose a workout for fun) compared with a given delayed-rewards focus (i.e., imagining they chose a

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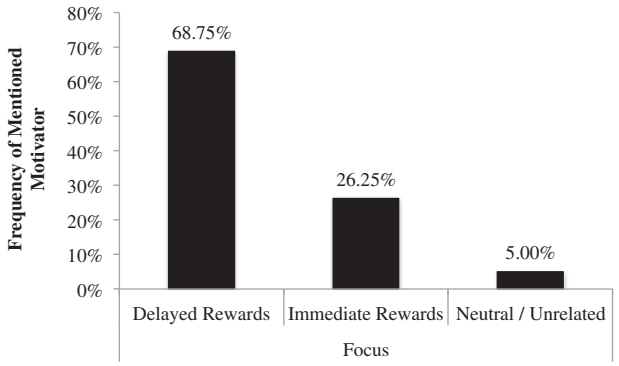
**FIGURE 1**

THE MAJORITY OF PEOPLE PLAN TO FOCUS ON DELAYED REWARDS TO MOTIVATE THEIR EXERCISE BEHAVIOR (STUDY 1).




workout for health goals). Whereas participants intuitively focused on delayed rewards to motivate their exercise, they indicated that a focus on immediate rewards would actually be more motivating for them ($M = 82.45$, SD = 21.72) than a focus on delayed rewards ($M = 77.18$, SD = 20.90; $t(79) = 2.23$, $p = .029$). Thus although people do not intuitively find it appealing to motivate themselves through immediate rewards, when presented with such motivators, people can see that these motivators would work. This finding suggests that people may be open to implementing an immediate-rewards focus to increase their exercise persistence.

### Posttest 2: Immediate Benefits for Engaging in Exercise

We contend that people receive immediate rewards when working out. To provide evidence for this and further explore the content of these benefits, we collected data from 50 Amazon MTurk workers (24 females; $M_{age} = 31.78$, SD = 9.40). We asked participants to (1) "Think about the benefits you receive in the moment while working out. Please list 3 benefits below."

Analyzing the immediate benefits participants listed that they receive during a workout (made by three coders), we found a majority indicated something about the experience. Specifically, 14.0% listed feeling good, 14.0% listed feeling healthy, 12.7% listed a clear mind, 11.3% listed burning calories, 11.3% listed feeling strong, 10.0% listed feeling productive, 8.0% listed feeling invigorated, 5.3% listed feeling proud, 4.7% listed having fun, and 8.7% listed something else (e.g., sweating out impurities or disconnecting from technology). Thus people are able to articulate the immediate benefits they perceive they attain when pursuing a workout.

Overall, study 1 finds that a focus on immediate rewards increases persistence in a long-term exercise goal compared with a focus on delayed rewards. In our next study, we examine whether attending to immediate rewards could increase persistence in a long-term goal of healthy eating above attention to delayed rewards as well as a neutral focus.

## STUDY 2: ATTENTION TO IMMEDIATE REWARDS BOOSTS HEALTHY FOOD CONSUMPTION ABOVE CONTROL

In study 1, we find bringing immediate rewards into activity pursuit increases persistence in a long-term exercise goal (hypothesis 1). However, this effect could be driven by a decrease in persistence when focusing on delayed rewards because people could infer from the presence of delayed rewards (or extrinsic benefits) that an activity offers fewer immediate rewards (Deci, Koestner, and Ryan 1999; Lepper, Greene, and Nisbett 1973; Maimaran and Fishbach 2014). For example, emphasizing long-term health benefits has been shown to undermine intrinsic immediate benefits, such that the taste of food presented as healthy is less enjoyable for consumers (Chandon and Wansink 2012; Howlett et al. 2009; Raghunathan, Naylor, and Hoyer 2006; Wansink 2003). Rather than a delayed reward focus reducing persistence, we predict that our effect is driven by an increase in persistence when focusing on immediate rewards.

To test this, study 2 examines our hypothesis that attending to existing immediate rewards increases persistence in long-term goals (hypothesis 2) by comparing a focus on immediate rewards with a delayed rewards and neutral focus. Participants in this study received a choice between eating organic and nonorganic carrots, and we manipulated a focus on immediate and delayed rewards by asking participants to choose based on taste or health. In this choice set, the majority of people are expected to choose the organic option; however, they may do so for different reasons. Those in the immediate-rewards condition choose organic because it is tastier, whereas those in the delayed-rewards condition choose organic because it is healthier. We also included a control condition to measure participants' control consumption of healthy foods, where they chose with no specific reward focus (i.e., based on color). We predicted that focusing on immediate rewards would increase consumption of a healthy food above a focus on delayed rewards and above control (hypothesis 2).

### Pretest: Primary Motivation for Healthy Eating

To confirm that people consume healthy foods (i.e., carrots, apples, and spinach) in our studies for the delayed rewards they receive, rather than for immediate rewards, an experimenter approached 70 undergraduate and graduate

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students on campus and invited them to complete a short survey in return for candy (25 females; $M_{age} = 23.96$, SD = 7.85). Participants answered, "What is the main reason why you eat carrots/apples/spinach? (please check 1 box)" with the option to select "To receive short-term benefits" or "To receive long-term benefits." Participants also answered, "How often do you eat (0 = Very rarely, 6 = Very often) carrots ($M = 2.27$, SD = 1.93), apples ($M = 3.01$, SD = 1.78), spinach ($M = 3.00$, SD = 1.62)?"

Analyzing reasons for carrot consumption, we find 69.4% ($n = 43$) of participants primarily eat carrots to receive delayed rewards, which is greater than chance ($z = 2.92$, $p = .003$). For apple consumption, we find 51.6% ($n = 33$) of participants primarily eat apples to receive delayed rewards, although this did not differ from chance ($z = .13$, $p = .901$). Lastly, we find 67.7% ($n = 44$) of participants eat spinach to receive delayed benefits, which is greater than chance ($z = 2.73$, $p = .006$). Participants who selected both options (carrots: $n = 4$; apples: $n = 4$; spinach: $n = 3$) and those who failed to check an option (carrots: $n = 4$; apples: $n = 2$; spinach: $n = 2$) were not included. Confirming people largely consume healthy foods in order to receive delayed benefits, we moved on to test our main hypothesis that focusing on immediate rewards increases consumption compared with a delayed rewards or neutral focus (control).

## Method

*Participants.* A total of 120 undergraduate and graduate students completed a taste test study in the lab in return for monetary compensation (55 females; $M_{age} = 19.80$, SD = 2.68).

*Procedure.* This study employed a 3 (reward focus: immediate vs. delayed vs. control) between-subjects design. All participants read that we were interested in what influences healthy food consumption and that they would be choosing between organic and nonorganic carrots to sample. Participants saw two small plastic bags (6.5 × 3.25 inches) of carrots that had been preweighed (1 serving, 85 g), one labeled organic and one labeled nonorganic (we used the same carrots with separate labels to ensure no real differences in taste due to choice of organic or nonorganic food). Those in the immediate-rewards focus read, "Please choose the carrots you think are the tastiest and that you will enjoy eating the most. Since you'll be eating the carrots today, it's important you choose one that you like and find enjoyable to eat." Those in the delayed-rewards focus read, "Please choose the carrots you think are the healthiest and that you will benefit the most from eating. Since you'll be eating the carrots today, it's important you choose one that is healthy and nutritious to eat." Lastly, those in the control condition read, "Please choose the carrots you think are more orange."

Participants made their selection and then sampled the carrots. They read they could eat as much or as little as they wanted, but that they needed to have at least some to answer the follow-up survey. After participants finished eating, they completed a survey that assessed process measures and corroborated our cover story. The relevant questions were (1) "How much did you enjoy the food you tasted?" (0 = Not at all, 6 = Very much) and (2) "How healthy would you say the food is that you tasted?" (0 = Not healthy, 6 = Very healthy).

We note that we also asked (1) "To what extent do you want to eat more of the carrots you selected?" (0 = Not at all, 6 = Very much; $M = 3.48$), (2) "When was the last time you ate?" (1 = Less than 1 hour ago, 4 = More than 5 hours ago; $M = 2.34$), (3) "How hungry were you when you started the study?" (4) "How hungry are you now?" (0 = Not at all hungry, 6 = Extremely hungry; $M_{before} = 2.03$, $M_{after} = 1.94$), and demographic questions. As predicted, we found no differences across conditions for any of the survey measures ($p > .14$). Specifically, we did not expect our manipulation to influence future intentions to consume more food because a focus on immediate rewards should only increase persistence in the moment. After the study ended, we weighed the remaining food and calculated the grams of carrots consumed.

## Results and Discussion

Participants' choice varied by condition ($\chi^2(2, N = 120) = 14.92$, $p < .001$), with 90% ($n = 36$) of participants choosing organic food in the delayed-rewards condition, 77.5% ($n = 31$) in the immediate-rewards condition, and 52.5% ($n = 21$) in the control ("chose orange") condition. Importantly, there was no difference in the proportion choosing organic carrots between the immediate and delayed reward conditions ($\chi^2(1, N = 80) = 2.30$, $p = .130$). We assume a lower proportion of participants chose the organic option in the control condition because they were trying to identify the "more orange" option. We also find no effect of choice on taste ratings ($M_{organic} = 4.45$, SD = 1.24; $M_{nonorganic} = 4.09$, SD = 1.25; $t(118) = 1.41$, $p = .163$), suggesting participants' carrot consumption experience was similar regardless of their choice.

In support of our hypothesis 2, an analysis of variance (ANOVA) on grams of food consumed yielded a significant effect of reward focus condition ($F(2, 117) = 3.70$, $p = .028$). As predicted, participants consumed more carrots in the immediate-rewards condition ($M = 38.18$ grams, SD = 26.71) than in the delayed-rewards condition ($M = 25.63$ g, SD = 21.37; $t(74.41) = 2.32$, $p = .023$). Further as predicted, participants ate more carrots in the immediate-rewards condition than in the control condition ($M = 26.85$ g, SD = 19.56; $t(71.48) = 2.16$, $p = .034$). There was no difference between delayed-rewards and control conditions ($t < 1$). We find no interaction between

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reward focus and choice on consumption ($F < 1$, $p = .860$), although this analysis is less meaningful given the low selection of nonorganic carrots (delayed rewards: $n = 4/40$; immediate rewards: $n = 9/40$; neutral: $n = 19/40$). An analysis of only participants who chose organic carrots revealed the same pattern of results ($F(2, 85) = 3.64$, $p = .030$). Participants consumed more in the immediate-rewards focus than both the delayed-rewards focus ($M_{immediate} = 38.87$ g; SD = 26.83 vs. $M_{delayed} = 25.14$ g, SD = 19.77; $t(54.42) = 2.35$, $p = .022$) and the neutral focus ($M_{neutral} = 26.38$ g, SD = 17.72; $t(49.99) = 2.02$, $p = .049$).

Study 2 thus finds that a focus on immediate rewards increases consumption of a healthy food more than a neutral focus (control) and a delayed-rewards focus. As expected, participants who focused on delayed benefits from healthy eating consumed similarly to the control condition.

We next tested our third hypothesis, that immediate rewards predict persistence in long-term goals more strongly than delayed rewards. We conducted a linear regression of carrot consumption on food enjoyment ($M_{taste} = 4.36$, SD = 1.25) and perceptions of health ($M_{health} = 5.16$, SD = .88) simultaneously. As predicted (hypothesis 3), we find immediate rewards are more strongly associated with increased consumption ($\beta_{taste} = .23$, $t = 2.28$, $p = .024$) than delayed rewards ($\beta_{health} = .06$, $t < 1$).

We argue that attention to immediate rewards increases healthy food consumption (hypothesis 2). Alternatively, it could be that the presence of—rather than attention to—immediate rewards increases consumption (hypothesis 3). That is, it is possible nonorganic carrots were perceived as tastier than organic carrots, which drives the difference in consumption between immediate and delayed reward conditions (recall that a few more participants chose nonorganic in the immediate condition). We conducted a posttest to rule out the explanation that nonorganic carrots are perceived as tastier than organic ones. Fifty participants (26 females; $M_{age} = 32.20$, SD = 9.84) rated "Which carrots do you think are tastier?" and "Which carrots do you think are healthier?" As predicted, we find a majority of participants rate organic carrots as tastier (74.0%, $n = 37$; $z = 3.25$, $p = .001$) and healthier (88.0%, $n = 44$; $z = 5.23$, $p < .001$) than nonorganic carrots.

Taken together, these results suggest a focus on immediate (vs. control and vs. delayed) rewards increased consumption of a healthy food, such that tastiness, but not healthiness, predicted consumption. We further found no difference in consumption between a delayed-rewards focus and a neutral focus. Although our theory is silent on this comparison, since we are mainly interested in the role of immediate rewards, we note that a delayed-rewards focus could in theory also increase consumption relative to control because rewards, by definition, have a positive impact on engagement (e.g., people take bad-tasting medicine to recover from illness). One potential reason delayed rewards did not increase consumption relative to control in our study is that they were not sufficiently strong. We also note that it is possible that a delayed-rewards focus could render carrots less tasty (through mental discounting, e.g., Maimaran and Fishbach 2014; although these authors argue their effect is limited to young children), and thus a delayed-rewards focus could have *reduced* consumption relative to control. We do not find evidence for this either. In our next study, we tested whether the presence of immediate rewards (e.g., that the food is somewhat tasty) is a prerequisite for observing this effect of immediate rewards.

## STUDY 3: MODERATION BY POSITIVE EXPERIENCE

This study identified a moderator of the effect of attention to immediate rewards (hypothesis 2): we hypothesized that a positive experience is necessary for a focus on immediate rewards to increase persistence in a health goal. We tested this by having participants consume a healthy food that was either tasty (apples) or less so (spinach, which most people consume with other foods and not alone) while focusing on either immediate or delayed rewards. We predicted that attending to immediate (vs. delayed) rewards would increase consumption of healthy food when the experience is positive (apples), while there would be no difference when the experience is less positive (spinach).

### Method

*Participants.* An experimenter approached 153 undergraduate and graduate students on campus and invited them to complete a taste test study in return for a pen (90 females; $M_{age} = 24.44$, SD = 7.32).

*Procedure.* This study employed a 2 (reward focus: immediate vs. delayed) × 2 (assigned food: spinach vs. apples) between-subjects design. All participants in the study read we were interested in understanding what influences healthy food consumption and that they would be choosing between organic and nonorganic spinach (or apples, in the other condition). Participants were shown two small plastic bags (6.5 × 3.25 inches) that had been preweighed, one labeled organic spinach/*apples* and one labeled nonorganic spinach/*apples* (we used the same food, spinach or apples, but with different labels to ensure no real differences in taste due to choice of organic or nonorganic food). Spinach bags contained 20 g of spinach (about 20 baby spinach leaves) and apple bags contained 98 g of apples (about 8 or 9 apple slices).

Participants in the immediate-rewards focus read, "Please choose which spinach/*apples* you think are the tastiest and that you will enjoy the most. You'll be eating the spinach/*apples,* so it's important you choose one that you find enjoyable to eat." Participants in the delayed-

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rewards focus were asked, "Please choose which spinach/*apples* you think are the healthiest and that you think are more nutritious. You'll be eating the spinach/*apples,* so it's important you choose one that you find healthy to eat." As in study 2, we expected the majority of our participants to choose the organic option, but for different reasons: either because organic is healthier, or because it is tastier.

Participants made their selection and sampled their chosen food. They read that they could have as much or as little as they wanted, but that they needed to have at least some to answer the follow-up survey as part of our cover story. After sampling their snack, participants completed a survey identical to the one from study 2. The relevant questions we measured assessed (1) food enjoyment and (2) health perceptions of food. We also measured desire to eat more of the selected food ($M = 3.99$) and hunger before and after eating ($M_{before} = 2.33$, $M_{after} = 2.24$), finding no main effects or interactions ($p > .183$). The null effect on intentions to consume more food is consistent with our expectation that a focus on immediate rewards would not increase initiation of future goal pursuit. Participants in the apple condition reported eating more recently ($M_{apple} = 1.69$, SD = .88) than participants in the spinach condition ($M_{spinach} = 2.17$, SD = .87; $F(1, 149) = 11.14$, $p = .001$), with no other effect or interaction ($F < 1$). After participants finished the study, we weighed the remaining food and calculated the percentage of food consumed to compare between the spinach and apple conditions.

## Results and Discussion

We first analyzed choice for the organic versus nonorganic option. A logistic regression of choice on reward focus (immediate vs. delayed) × assigned food (spinach vs. apples) revealed a significant effect of reward focus ($\beta = .79$, Wald test $\chi^2(1, N = 153) = 11.07$, $p < .001$), with no effect of assigned food ($p = .108$) or focus × food item interaction ($p = .409$). As predicted, a majority of participants chose organic food in the delayed-rewards focus (91%, $n = 71$; $z = 7.13$, $p < .001$) and in the immediate-rewards focus (66.7%, $n = 50$; $z = 2.77$, $p = .006$), although this proportion was greater in the delayed-rewards focus. There was no effect of choice (organic vs. nonorganic) on ratings of taste ($M_{organic} = 4.17$, SD = 1.40 vs. $M_{nonorganic} = 4.19$, SD = 1.03; $t < 1$).

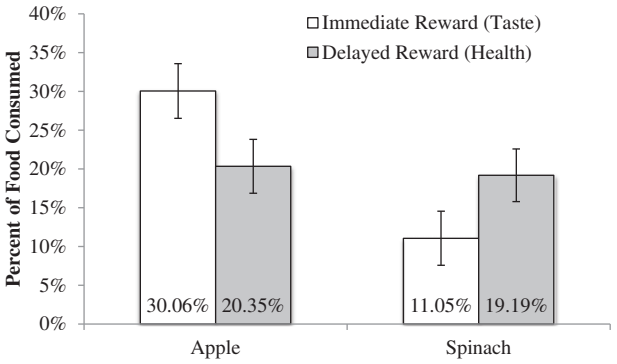
We next conducted our manipulation check. An ANOVA of perceptions of taste on reward focus × assigned food yielded a main effect of food ($F(1, 149) = 21.95$, $p < .001$). Participants assigned to eat apples rated their food as tastier than those assigned to eat spinach ($M_{apples} = 4.65$, SD = 1.03 vs. $M_{spinach} = 3.71$, SD = 1.42; $t(151) = 4.72$, $p < .001$). There was no effect of focus on ratings of taste ($F < 1$), or focus × food item interaction ($F = 1.48$, $p = .226$). Importantly, an ANOVA of perceptions of health yielded no significant main effects ($F < 1.72$, $p > .191$) or focus × food item interaction ($F < 1$), suggesting participants in the apple and spinach conditions thought their assigned foods were similarly healthy.

To test our main prediction, we conducted an ANOVA of reward focus × assigned food on percentage of food consumed. We analyze percentages to easily compare between apple and spinach consumption, although these foods vary by weight. As predicted, we found a focus × food item interaction ($F(1, 149) = 6.60$, $p = .01$; figure 2). Participants assigned to eat apples consumed more in the immediate-rewards focus ($M = 30.06\%$, SD = 22.02%) than the delayed-rewards focus ($M = 20.35\%$, SD = 15.86%; $F(1, 149) = 3.84$, $p = .05$). There was no difference between conditions for those eating spinach ($M_{immediate} = 11.05\%$, SD = 15.82% vs. $M_{delayed} = 19.19\%$, SD = 28.96%; $F(1, 149) = 2.79$, $p = .10$). We also found a main effect of food item, indicating participants ate a greater percentage of apples than spinach ($M_{apples} = 25.14\%$, SD = 19.64% vs. $M_{spinach} = 15.22\%$, SD = 23.70%; $t(151) = 2.81$, $p = .006$). An analysis of reward focus × assigned food on consumption for participants who only chose organic food items revealed a similar pattern of results ($F(1, 117) = 4.89$, $p = .03$). Those in the immediate-rewards condition assigned to eat apples consumed marginally more food than those in the delayed-rewards condition ($M_{immediate} = 32.25\%$, SD = 23.90% vs. $M_{delayed} = 20.40\%$, SD = 16.62%; $F(1, 117) = 3.39$, $p = .07$), whereas there was no difference in reward focus for spinach consumption ($M_{immediate} = 11.67\%$, SD = 17.73% vs. $M_{delayed} = 18.71\%$, SD = 29.81%; $F(1, 117) = 1.58$, $p > .21$).

Next, we tested whether immediate rewards (taste) more strongly predict consumption than delayed rewards (health;

**FIGURE 2**

PARTICIPANTS CONSUMED MORE APPLES WHEN FOCUSING ON IMMEDIATE REWARDS THAN DELAYED ONES, WHILE THERE WAS NO EFFECT OF FOCUS ON SPINACH CONSUMPTION (LINES IN BARS REPRESENT ± 1 SE)

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hypothesis 3). We conducted a linear regression of food consumption (both apples and spinach) on food enjoyment ($M_{taste} = 4.17$, $SD = 1.33$) and perceptions of health ($M_{health} = 4.93$, $SD = 1.00$) simultaneously. As predicted, we found a significant effect of immediate rewards ($\beta_{taste} = .18$, $t = 2.19$, $p = .03$), whereas the effect of delayed rewards was not significant ($\beta_{health} = -.06$, $t < 1$).

This study extends the results of study 2, where a focus on immediate (vs. delayed rewards and control) increased consumption of a healthy food, and it shows these results are moderated by whether the food offers a positive experience (i.e., is something that people consume on its own). For some activities, such as eating spinach for some people, there are no immediate rewards inherent in the activity, and this serves as a boundary condition of the effect. We further found (again) that tastiness but not healthiness predicted consumption of healthy foods. In our next and final study, we move to an academic domain and test whether bringing immediate rewards into the pursuit of a school assignment increases students' persistence (hypothesis 1).

## STUDY 4: SNACKS, COLORS, AND MUSIC HELP HIGH SCHOOLERS STUDY

Our next study examined the effect of bringing in immediate rewards on increased persistence for high school students working on an in-class assignment (hypothesis 1). Our theory predicts bringing immediate rewards (i.e., healthy snacks, colored pens, fun pencils, and music) into the pursuit of a schoolwork activity would increase students' persistence, even though these immediate rewards are external to activity pursuit. Alternatively, one could expect that introducing external, immediate rewards could be distracting such that students attend to the colors and music more than to their work. To test our prediction, we offered high school students in the immediate-rewards condition the opportunity to add immediate rewards to their pursuit of an in-class assignment, while those in the control condition completed the assignment as they normally would. We predicted that students who added immediate rewards to the pursuit of their in-class assignment would persist longer in their task than those in the control condition.

Specifically, based on conversations with the student participants' teachers, we offered the students a combination of three immediate rewards while they were working on the assignment: completing their assignment in colored pens and fun pencils, listening to music, and eating healthy snacks. To support teachers' intuition, in a pilot test, we surveyed 20 high school students ($M_{age} = 15.30$, $SD = .57$) on whether these three features would make working on an assignment more fun. We asked yes/no questions: (1) "Would eating snacks in class make schoolwork more fun?" (2) "Would listening to music in class make schoolwork more fun?" and (3) "Would using colored pens in class make schoolwork more fun?" A significant majority (90%) of students indicated eating snacks in class would make school work more fun, which was greater than chance ($z = 3.35$, $p < .001$), 95% indicated listening to music would make school work more fun ($z = 3.80$, $p < .001$), which was also greater than chance, and 30% indicated using colored pens would make schoolwork more fun, which did not differ from chance ($z = 1.57$, $p = .12$). To increase the likelihood that the rewards improved students' experience of working on an in-class assignment, we delivered all three rewards at once. We note that we were less interested in pinpointing which reward had the greatest influence on students' persistence as much as exploring the combined impact; hence we delivered all three simultaneously.

### Method

*Participants.* Participants were students between grades 9 and 12 enrolled in a Florida high school. We collected data during either a geometry or statistics class from eight periods with class sizes ranging from 12 to 28. We collected data from a total of 156 participants (88 females; $M_{age} = 16.19$, $SD = 1.35$). Students completed the study as part of an in-class school assignment that they worked on individually. (We also collected data from two geometry class periods that we do not analyze. These two classes were remedial students, and the experimenter reported that the teacher worked with the students to complete the assignment during class; $n = 33$).

*Procedure.* The study employed a 2 (immediate rewards vs. control) between-subjects design. The high school students received an in-class assignment from their teacher to complete independently, which was collected at the end of class. Teachers came up with their own assignments based on material they were currently teaching. We collected data during four statistics classes ($n = 62$) and four geometry classes ($n = 94$).

In the immediate rewards condition, teachers told students, "You will complete this assignment independently in class today. You can make working on this assignment more fun and enjoyable for yourself. For example, you can use fun colored pens or pencils, or you can snack while you work. I will also play some background music while you work on this assignment. Please choose quickly and quietly any fun pens, pencils, or snacks that you would like to use while you work. I will collect this assignment before the end of the period, so use your time wisely." The students were then able to select various colored pens and pencils from a box in the classroom as well as different healthy snacks (e.g., fruit snacks, granola bars, pretzels), and the teacher played relaxing music. Importantly, these immediate rewards were not conditional on completing or

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progressing on the assignment; students could listen to music or eat while procrastinating.

In the control condition, the teacher told students, "You will complete this assignment independently in class today. I will collect this assignment before the end of the period, so use your time wisely." They did not receive any other instructions or materials while working on their task.

Before the end of class, all students received a survey to complete that was collected along with their assignment. In this survey, we measured immediate rewards ($\alpha = .93$): (1) "How much did you enjoy working on this assignment?" (0 = Did not enjoy, 6 = Enjoyed a lot), (2) "Was working on this assignment fun?" (0 = Not at all fun, 6 = Very fun), and (3) "Was working on this assignment interesting?" (0 = Not at all interesting, 6 = Very interesting). We also measured delayed rewards ($r = .54$, $p < .001$): (1) "Did you think working on this assignment was useful?" (0 = Not useful, 6 = Very useful) and (2) "Was working on this assignment important for understanding the materials?" (0 = Not important, 6 = Very important). We next assessed effort: (1) "How much effort did you put into working on this assignment?" (0 = No effort, 6 = A lot of effort). Lastly, we measured distractedness ($\alpha = .76$): (1) "How focused were you on this assignment" (0 = Not focused, 6 = Very focused, reverse-coded), (2) "How much time did you spend daydreaming or thinking about other things during this assignment?" (0 = No time, 6 = A lot of time), and (3) "How distracted were you during this assignment?" (0 = Not distracted, 6 = Very distracted).

## Results and Discussion

We first tested our main hypothesis that adding immediate rewards to the pursuit of a class assignment would increase persistence compared with a control group (hypothesis 1). We computed a measure of persistence by calculating the percentage of in-class assignment problems attempted out of the total possible amount ($M = 87.93\%$, $SD = 15.13\%$). Attempted problems did not need to have the exact correct solution, but they needed to have calculations showing the student worked on the problem and made progress toward reaching the correct solution. An ANOVA of condition (immediate rewards vs. control; controlling for class) on percentage of problems attempted resulted in the predicted effect ($F(1, 153) = 5.62$, $p = .019$). Students who received immediate rewards attempted to complete more problems on their class assignment ($M = 90.73\%$, $SD = 11.80\%$) than those in the control condition ($M = 85.06\%$, $SD = 17.54\%$). An ANOVA of condition on percentage of problems correct was not significant ($M_{immediate} = 56.53\%$ vs. $M_{control} = 51.42\%$; $F(1, 153) = 1.25$, $p = .266$), likely because number of attempts captures task motivation only, whereas number of completed problems is influenced by both motivation and ability.

Having found evidence that adding immediate rewards increases persistence in schoolwork for high school students, we next tested whether immediate rewards better predict increased persistence compared with delayed rewards (hypothesis 3). A regression of persistence (percentage of problems attempted) on immediate and delayed rewards resulted in the predicted effect. Students who reported experiencing more immediate rewards while working on their assignment attempted more math problems ($\beta = .19$, $t = 2.23$, $p = .027$), with no significant effect of delayed rewards ($\beta = .02$, $t < 1$, $p = .838$). We find a similar pattern of results when controlling for class (geometry vs. statistics class; immediate rewards: $\beta = .24$, $t = 2.52$, $p = .013$; delayed rewards: $\beta = -.01$, $t < 1$, $p = .894$; class: $\beta = .11$, $t = 1.18$, $p = .241$), gender (immediate rewards: $\beta = .18$, $t = 2.18$, $p = .031$; delayed rewards: $\beta = .01$, $t < 1$, $p = .957$; gender: $\beta = .09$, $t = 1.09$, $p = .276$) and age (immediate rewards: $\beta = .19$, $t = 2.08$, $p = .039$; delayed rewards: $\beta = .02$, $t < 1$, $p = .863$; age: $\beta = -.01$, $t < 1$, $p = .938$). Lastly, our manipulation did not introduce differences in reported immediate rewards ($M = 3.34$, $SD = 1.45$; $t < 1$, $p = .379$), delayed rewards ($M = 4.59$, $SD = 1.04$; $t = 1.60$, $p = .112$), effort ($M = 4.84$, $SD = 1.11$; $t < 1$), or distractedness ($M = 1.40$, $SD = 1.10$; $t < 1$), which suggests students were not explicitly aware that using colored pens, snacks, and music made them enjoy the task more in the experimental (vs. control) condition. Further, students did not experience the task as less effortful; nor did they experience it as more distracting in the experimental (vs. control) condition.

In this study, we find evidence that adding immediate rewards to an in-class assignment increases persistence in that assignment for high school students. Interestingly, unlike in our earlier studies, the current study used immediate rewards that were external to, rather than inherent in, the activity. Presumably, such external rewards could also distract students from the assignment; for instance, by focusing on the food and music they could have neglected studying. However, this was not the case, and we can thus conclude that bringing in immediate rewards is useful regardless of whether these rewards are internal or external to the activity. We further find that experienced immediate rewards predict persistence more than experienced delayed rewards. Overall, this suggests adding immediate benefits can help students to work more on an in-class assignment without leading to distraction or a reduction in effort.

# GENERAL DISCUSSION

Consumers can harness immediate rewards to increase persistence in long-term goals. Across exercise, healthy eating, and academic goals, we find evidence that bringing in, or attending to, immediate rewards increases persistence in goal-related behaviors. Specifically, bringing

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immediate (vs. delayed) rewards into pursuit of a workout increases persistence, although gym-goers intuitively are less likely to use immediate rewards to motivate themselves to exercise (hypothesis 1, study 1). In addition, those focusing on immediate rewards consume more of a healthy food than those focusing on delayed rewards or no specific focus (hypothesis 2, study 2). We find that focusing on immediate (vs. delayed) rewards further increases healthy food consumption for foods that engender a positive experience (e.g., eating apples, study 3). Moreover, bringing immediate rewards into pursuit of a school assignment increases persistence for high school students (hypothesis 1, study 4). Finally, across these studies, we find that the (self-reported) experience of immediate rewards is more strongly associated with persistence in goal-related activities than the experience of delayed rewards, even though all activities we study are primarily engaged in for the delayed rewards they provide (hypothesis 3).

The current work has important implications for consumers striving to achieve long-term goals. They can decide on a course of action that maximizes delayed rewards and then bring in immediate rewards to their actions (e.g., studying with a partner or listening to music while exercising). They can further focus on the aspects of their action that provide immediate rewards, such as the good taste of healthy food or relaxation inherent in exercising. Thus what may initially appear to people as a conflict pitting the desire to receive delayed rewards against the pull of immediate rewards, a conflict with negative consequences (Etkin, Evangelidis, and Aaker 2015; Hofmann et al. 2012) may need not be the case. Pursuing long-term goals often provides immediate rewards, and bringing in or focusing on these immediate benefits can increase goal persistence in activities that consumers care about pursuing.

Importantly, a focus on immediate rewards does not imply that immediate rewards become more valued than delayed rewards. If this were the case, consumers would be less interested in pursuing the activities we study (exercising, healthy eating, studying) and would opt instead to procrastinate and eat unhealthy foods. After all, as much as the immediate rewards of long-term goals matter, there are even greater immediate rewards for giving up on these long-term goals. Yet consumers are often able to stick to their long-term goals precisely because they value delayed rewards. We show that although delayed rewards are more important than immediate rewards, the immediate rewards for long-term goals are often unattended, and yet they can help goal pursuit; hence focusing on these rewards is effective in increasing persistence.

These findings have implications for reducing licensing effects. Whereas research has documented that physical activity can increase subsequent food intake (Martins et al. 2007), other work finds that this is less likely for those who consider the exercise enjoyable or fun (Fenzl, Bartsch, and Koenigstorfer 2014; Werle, Wansink, and Payne 2014). Possibly, not only do people persist longer when focusing on immediate rewards, but also they are less likely to undermine their goal pursuit later on if they focus on immediate, rather than delayed, rewards for present goal pursuit.

## Implications for Intrinsic Motivation and Food Decision Making

In our studies, immediate rewards were associated with intrinsic incentives, while delayed rewards were associated with extrinsic incentives. For example, the good taste of a healthy food is both an immediate reward and an intrinsic incentive. We assume, however, that immediate rewards will increase engagement more than delayed rewards even if the immediate rewards are extrinsic. For example, in study 4, the immediate rewards (music, food, colors) were external to studying, and yet they increased persistence. We note that in the majority of cases, and in our studies, immediate rewards overlap with intrinsic incentives such that immediate rewards provide intrinsic incentives, whereas delayed rewards provide extrinsic incentives. Therefore it is possible that immediate rewards will be seen as intrinsic because of their timing and regardless of their content. Future research can further explore how different combinations of rewards and incentives (e.g., immediate rewards offering delayed incentives) interact to influence persistence in long-term goals.

Importantly, we assume immediate rewards are powerful because they are often unattended and yet have the potential to improve the experience of goal pursuit. Through this additive process (i.e., calling attention to an unattended benefit), we could predict that bringing in or focusing on delayed rewards will increase motivation whenever these delayed rewards are not naturally attended to. In the current research, the primary, unambiguous motivation for engaging in all the activities (e.g., exercising, healthy eating, and studying) was to receive delayed outcomes. However, when the motivation behind activity pursuit is more ambiguous, adding a focus on delayed rewards may *increase* persistence because it increases the value of goal pursuit. For example, emphasizing to a consumer that personal hygiene can help him make friends (in addition to being a fun activity) may lead him to practice better hygiene when focusing on this delayed reward. In this example, the delayed reward highlights the fact that this activity can serve a long-term goal that the pursuer may not have initially realized. Therefore we would predict that, in contrast to our studies, when the reason behind activity engagement is unclear, adding a delayed rewards focus could serve to increase activity persistence by resolving the ambiguity and increasing the value of activity pursuit.

The current work joins recent research shifting the focus from food as health to food as well-being (Block et al. 2011; Cornil and Chandon, forthcoming), and though we study well-being more broadly by examining a range of

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goals people want to pursue in addition to healthy eating goals (i.e., studying and exercising), our work nonetheless contributes to and extends work on food decision making. While previous interventions have encouraged healthy eating by reducing the role of enjoyment in consuming unhealthy foods (Belei et al. 2012; Raghunathan et al. 2006; Shiv and Fedorikhin 1999), we find focusing on the immediate, positive rewards one receives from eating healthy foods helps increase the amount of healthy food consumed.

At first glance, our results may appear inconsistent with other work that demonstrates how healthy frames increase consumers' food consumption in general (Provencher, Polivy, and Herman 2009), and dieters' consumption in particular (Irmak, Vallen, and Robinson 2011). For example, Wansink and Chandon (2006) found simply labeling a food as low fat increased consumption of that food. However, this other research studied food that is inherently unhealthy and therefore adding the label "low fat," which emphasizes the long-term goal of being healthy, increases consumption by legitimizing consumption. In contrast, for the consumption of healthy food, as in our research, emphasizing health did not increase consumption above control because people are not looking for excuses to justify consumption.

## Marketing Implications and Conclusion

These results have important implications for marketers looking to increase consumption of products and services that cater to consumers' long-term goals. For one, we find products (e.g., healthy food) that provide immediate rewards to consumers (i.e., generate a positive experience during consumption) lead to increased consumption compared with products that lack these immediate rewards. This suggests that the marketing of such products should focus on these immediate rewards; for example, marketers could emphasize that healthy food products are tasty or that exercise activities are enjoyable. Notably, however, we study consumers' choice to persist in an activity once they have already started it, and it is possible that an emphasis on delayed rewards will be effective in promoting certain products in advance of consumption. Thus it could be the case that marketers of healthy food should emphasize the healthiness of their product in their advertisements; however, our data suggest that, on the food item itself (e.g., on the packaging), the positive taste should be emphasized to encourage consumption. For example, after the point of purchase, health companies may be able to increase consumption of their products by focusing consumers on taste rather than health.

This work also has implications for consumers trying to stick with their goals. Our work suggests a dieter looking to persist in her goal of losing weight through healthy eating should focus on the immediate rewards that come with eating healthy foods, such as the enjoyable taste or the positive feelings she has from eating healthily, rather than on how her healthy food consumption will be useful in reaching her long-term goal. Furthermore, a student taking an SAT prep course could select a course based on the immediate rewards it provides (e.g., an engaging instructor), which could facilitate persistence in the course. While focusing on the long-term goal may help people initiate goal pursuit (Fishbach and Choi 2012), this is only half of the battle. Consumers need to be able to sustain persistence in their long-term goals, and one way we propose they can do so is by focusing on the immediate rewards inherent in the pursuit of long-term goals.

To conclude, while lay intuition and past research on self-control prescribe focusing on delayed rewards as the optimal strategy in goal pursuit, we offer another technique. Once consumers have settled on a long-term goal to pursue, focusing on the immediate rewards they achieve during pursuit can help facilitate persistence in their long-term goals.

## DATA COLLECTION INFORMATION

Both authors jointly designed and ran studies 1–4. Study 1: The first author supervised data collection by research assistants at the University of Chicago Ratner Athletic Center in the summer of 2014. Study 2: The first author supervised data collection by research assistants at the University of Chicago Decision Research Lab in the fall of 2014. Study 3: The first author supervised data collection by research assistants on the University of Chicago campus in the summer of 2014. Study 4: The first author supervised data collection by a research assistant at a high school in the spring of 2015. Both authors jointly analyzed and interpreted the data.

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