Journal of Personality and Social Psychology
2010, Vol. 98, No. 4, 559–572

0022-3514/10/$12.00 DOI: 10.1037/a0018833

Increasing or Decreasing Interest in Activities: The Role of Regulatory Fit

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What makes people's interest in doing an activity increase or decrease? Regulatory fit theory (E. T. Higgins, 2000) provides a new perspective on this classic issue by emphasizing the *relation* between people's activity *orientation*, such as thinking of an activity as fun, and the *manner* of activity engagement that the surrounding situation supports. These situational factors include whether a *reward* for good performance, expected (Study 1) or unexpected (Study 2), is experienced as *enjoyable* or as *serious* and whether the *free-choice period* that measures interest in the activity is experienced as *enjoyable* or as *serious* (Study 3). Studies 1–3 found that participants were more likely to do a fun activity again when these situational factors supported a manner of doing the activity that fit the fun orientation—a reward or free-choice period framed as enjoyable. This effect was not because interest in doing an activity again is simply greater in an enjoyable than a serious surrounding situation because it did not occur, and even reversed, when the activity orientation was important rather than fun, where now a serious manner of engagement provides the fit (Study 4a and 4b).

Keywords: motivation, self-regulation, value, interest, regulatory fit

Why is it that people's interest in doing an activity sometimes increases after engagement, whereas at other times it decreases? This has been a central question in motivation science for over a century because not only does it concern the basic mechanisms underlying interest in doing things, but the answers also have practical significance for dealing with a broad range of everyday problems, from increasing interest in studying to decreasing interest in eating junk food.

Not suprisingly, this important question has been addressed from a wide variety of perspectives, including learning theory (e.g., Skinner, 1938; Thorndike, 1911), self-determination theory (e.g., Deci, 1971; Deci & Ryan, 1985), dissonance theory (e.g., Festinger, 1957; Wicklund & Brehm, 1976), and self-perception theory (e.g., Bem, 1965; Kruglanski, Alon, & Lewis, 1972; Lepper, Greene, & Nisbett, 1973). Although these perspectives propose very different answers to why increases or decreases in interest occur, they have one basic assumption in common—the assumption that people's interest in doing an activity again is not determined solely by the properties of the activity itself, but by *situational factors* that surround the activity engagement. We agree with this assumption. The question, then, is which situational factors need to be taken into account? We believe that regulatory fit theory (Higgins, 2000) provides a new approach to answering this question because the theory is explicitly concerned with the *relation* between people's *orientation* toward performing an activity and the *manner* of engagement that the surrounding situation supports. The purpose of our studies was to test some novel predictions from this theory.

The classic perspective on how the surrounding situation can influence interest in doing an activity again comes from learning theory. Across several types of learning theory (see Kimble, 1961), a general postulate is that rewarding an activity under one set of circumstances (the initial engagement situation) increases the likelihood that the activity will be repeated later under similar circumstances (the subsequent engagement situation). From this perspective, it is the relation between the features of the initial and subsequent situations that is critical (e.g., discrimination learning).

Other types of relations have been emphasized in other perspectives. For example, what is critical from the self-determination perspective (e.g., Deci & Ryan, 1985) is whether the initial situation surrounding the activity makes people experience the activity engagement as self-determined or as externally controlled. For instance, when the initial situation introduces a reward whose attainment is contingent on performance, the reward can undermine people's sense of autonomy or self-determination during the initial engagement. This, in turn, can undermine their interest in doing the activity again (e.g., Deci, 1971).

From the perspective of dissonance theory (Festinger, 1957) and self-perception theory (Bem, 1965), what matters is the extent to

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This research was supported by National Institute of Mental Health Grant 39429 awarded to E. Tory Higgins.

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which the surrounding situation provides sufficient justification or reason for engaging in the activity, such as the magnitude of the promised reward for doing the activity (see, for example, Lepper, 1983). For instance, being promised an attractive reward for doing an activity allows people to justify or account for their initial engagement in terms of the positive value of the reward (an exogenous inference) rather than the positive value of the activity itself (an endogenous inference), thereby undermining the activity as a worthwhile end in itself (e.g., Kruglanski, 1975; Kruglanski et al., 1972; Lepper et al., 1973).[1]

These perspectives have greatly enriched researchers' understanding of how situational factors surrounding people's engagement in an activity can increase or decrease their interest in that activity, as reflected in their desire to do it again. The characteristics of the situation surrounding the initial engagement, as well as the relation between those characteristics and the characteristics of the subsequent situation in which interest in doing the activity again is tested, have received thoughtful attention by these perspectives. What has received less attention is the relation between an orientation to performing the activity, which *is* often based on the subjective properties of the activity itself, and the manner of engagement that is supported by the surrounding situation. In contrast, it is precisely this relation that is the concern of regulatory fit theory (Higgins, 2000, 2005).

According to regulatory fit theory, when people pursue a goal in a manner that sustains (fit) rather than disrupts (nonfit) their current regulatory orientation, people feel right about their goal pursuit activity, and their engagement in the activity is strengthened. Because several studies have investigated this proposal in terms of the regulatory focus theory distinctions between a promotion versus a prevention goal *orientation* and an eager versus a vigilant *manner* of goal pursuit (Higgins, 1997), we use these distinctions to illustrate regulatory fit and nonfit. A *promotion focus* is concerned with aspirations and accomplishments. A *prevention focus* is concerned with safety and responsibilities. *Eager strategies* are approach strategies that support gains or advancement, whereas *vigilant strategies* are avoidance strategies that support nonlosses. Studies have found that a promotion orientation is sustained by pursuing goals in an eager manner, whereas a prevention orientation is sustained by pursuing goals in a vigilant manner (e.g., Forster, Higgins, & Idson, 1998; Higgins, 2005; Shah, Higgins, & Friedman, 1998).

When goal pursuit is sustained, engagement strength increases, and, for a positive activity, this intensifies the attractiveness of the activity (Higgins, 2005, 2006). Regulatory fit theory predicts that individuals will be more strongly engaged in an activity and value it more when they have a promotion orientation toward the activity and engage it in an eager manner or have a prevention orientation toward the activity and engage it in a vigilant manner as compared with the nonfit alternatives (i.e., promotion/vigilant; prevention/eager). The results of multiple studies support this prediction (e.g., Freitas & Higgins, 2002; Higgins, Idson, Freitas, Spiegel, & Molden, 2003).

Of importance for the purpose of the present article, there is also evidence of fit effects for other kinds of activity orientations (Avnet & Higgins, 2003; Bianco, Higgins, & Klem, 2003). Most relevant to the present studies is the research by Bianco et al. (2003) on fun and importance as activity orientations that are or are not sustained by the surrounding situation. One set of studies identified people's implicit theories about the nature of different activities—whether they were basically "just fun" activities or basically "just important" activities. There was a clear consensus that engagement in some activities (e.g., playing dating games) was basically "just fun," whereas engagement in other activities (e.g., carrying out financial duties) was basically "just important."

In the Bianco et al. (2003) research, all participants engaged in the same activity, but it was labeled as either *a dating game* or *financial duties* to activate different orientations toward it (through the different implicit theories). Independent of the "fun" or "important" orientations toward the activity, different surrounding situations were created to support either a fun or a serious manner of engaging in the activity. The different surrounding situations were created through the task instructions that were given to participants for how to engage in the activity. In one study, for example, the instructions in both the "dating game" and "financial duties" conditions suggested engaging in the activity either "as a fun diversion" or "as an important part of your life experience." This study found that regulatory fit ("dating game"/fun instructions; "financial duties"/serious instructions) produced better performance than did nonfit ("dating game"/serious instructions; "financial duties"/fun instructions).

The Bianco et al. (2003) findings demonstrate that performance can be affected by the *relation* between a person's fun or important orientation to an activity and the fun or serious manner of engagement that the surrounding situation supported. These studies were not designed to address the question of what makes people's interest in an activity increase or decrease, as reflected in whether they later choose to do it again. Because of this, these studies did not consider how different kinds of situational rewards or different kinds of interest-testing situations might increase or decrease interest in doing an activity. In contrast, these questions were central to the aims of the present studies. Our studies combined aspects of the Bianco et al. (2003) paradigm with aspects of the classic experimental paradigm for studying how situational factors can increase or decrease people's subsequent interest in doing an activity (e.g., Deci, 1971; Kruglanski et al., 1972; Lepper et al., 1973).

As one example of how the regulatory fit perspective can provide an additional perspective on why interest in doing an activity can increase or decrease, consider the key "expected reward" condition of the classic Lepper et al. (1973) study. Child participants perform an activity they naturally consider fun (drawing pictures), but now they have to do it in a situation that makes the manner of engagement serious by adding a performance-contingent reward. In this critical experimental condition, then, there could be a nonfit relation between the children's *fun* orientation toward the activity and the surrounding reward situation that supports a *serious* manner of engagement. In the classic "unexpected reward" comparison condition, however, there is no reward contingency while children perform the activity, and the reward

[1] Activity engagement theory (e.g., Higgins, Trope, & Kwon, 1999) concerns a special kind of relation between activity properties and situation features—when people switch back and forth between activities presented simultaneously (e.g., a coloring storybook). Subsequent interest is undermined for two positive activities but is augmented for two negative activities.

arrives later as an enjoyable surprise. This enjoyable surprise could be more of a fit than a nonfit to the children's fun orientation. Therefore, the finding that interest in doing the activity again decreased for children in the "expected reward" condition compared with those in the "unexpected reward" condition could be because the former but not the latter experienced a nonfit.

The Present Studies

In our studies, we used a classic methodology to test the effects of regulatory fit on subsequent interest in an activity: Participants perform an activity, stop the activity, and subsequently have the opportunity to do the activity again during a free-choice period. In addition to the potentially inherent characteristics of rewards, such as their informational and controlling aspects (Deci & Ryan, 1985), regulatory fit theory suggests that rewards can create a surrounding situation that supports a manner of activity engagement that either sustains (fit) or disrupts (nonfit) the actors' orientation toward that activity. Because the classic literature has used activities for which the actors have a fun orientation, in Studies 1–3, we also used a fun orientation activity. In Studies 1 and 2, we examined the effects of "expected reward" and "unexpected reward" on later interest in doing a fun activity again.

As in the prior literature, the reward was contingent on performance in the "expected reward" study (Study 1) but was not contingent on performance in the "unexpected reward" study (Study 2). What differed in our studies from the previous literature was that the reward, both when it was "expected" and when it was "unexpected," was framed as being either "*enjoyable*" or "*serious*" to create a surrounding situation that supported a manner of activity engagement that, respectively, sustained (fit) or disrupted (nonfit) participants' fun orientation toward the activity. We predicted that, in both the "expected reward" and "unexpected reward" studies, participants' subsequent interest in repeating the fun activity would be greater in the fit than in the nonfit condition.

Study 3 was designed to extend the previous literature in a different way. The participants in this study neither expected nor received any reward in the first part of the session. In the second part of the session, the participants decided which activity or activities to do during a free-choice period. In the literature, participants' choice of what to do during this period is the standard measure of their interest in the activity. That is also the dependent measure we used in our studies. In previous studies, it is not completely clear how participants represented this free-choice situation with respect to what manner of decision making it supported—fun decision making or serious decision making. For the first time, we manipulated this surrounding situational factor. For half the participants, the manner of decision making was made enjoyable ("This is your free time"), and for the other half it was made serious ("This is the time management portion of the experiment"). The former manner of decision making sustains a fun orientation (fit), whereas the latter disrupts it (nonfit). Again, we predicted that participants' interest in the fun activity, as reflected in their choosing to do it again, would be greater in the fit than in the nonfit condition.

From the perspective of regulatory fit theory, Study 3 is important because it was designed to go beyond the motivational effects of rewards, whether expected or unexpected, to address the more general question of how regulatory fit or nonfit can increase or decrease interest in an activity. The classic studies on interest in doing an activity have focused on reward, with both the intrinsic motivation mechanisms and the operant conditioning mechanism being concerned with the effect of reward. Regulatory fit, however, is not about reward per se. In Studies 1 and 2, we used the manner of reward—enjoyable or serious—as a method to sustain (fit) or disrupt (nonfit) the participants' orientation to the activity. But orientation to an activity can be sustained or disrupted by other surrounding situational factors that support a particular manner of goal pursuit. It is the manner of goal pursuit that matters—whether it fits or does not fit the actor's activity orientation. Thus, even if there is no reward at all and there is only the free-choice period during which interest in an activity is measured, it should be possible to frame the free-choice period itself so that the manner of deciding what to do sustains (fit) or disrupts (nonfit) the activity orientation.

In Studies 4a and 4b, we addressed a potential limitation of Studies 1–3. Because the participants in these studies had a fun orientation toward the activity, an enjoyable surrounding situation, whether associated with the reward or the free-choice period, creates a fit, whereas a serious surrounding situation creates a nonfit. Regulatory fit theory predicts greater interest in the fun activity when there is a fit than a nonfit. But if the findings support the predictions, one might argue that this is because an enjoyable surrounding situation, as compared with a serious surrounding situation, somehow makes participants want to do whichever activity they were doing before.

It should be noted, however, that this alternative interpretation is not as obvious as it might appear at first glance. For example, what if the enjoyable framing induced a more positive mood than the serious framing? A positive (vs. negative) mood increases creativity and riskiness (e.g., Isen, 1987; Schwarz, 1990), that is, openness to alternatives, which should, if anything, *increase* willingness to change and try a new activity rather than stick with the same old activity (see Liberman, Idson, Camacho, & Higgins, 1999). This is the *opposite* of what regulatory fit theory predicts. Nonetheless, it would be helpful to directly rule out the possibility that an enjoyable surrounding situation somehow motivates people to do whichever activity they were doing before. If this were what is going on, then having an enjoyable surrounding situation should always motivate people to do whichever activity they were doing before. And this includes people choosing to do again the activity they were doing before when it is an activity that they have an *important* orientation toward. But regulatory fit would not make this prediction. It would now predict that a surrounding situation supporting a serious manner would produce greater interest in doing the activity again than a surrounding situation supporting an enjoyable manner because a serious manner would fit the important orientation toward the activity. We tested this prediction in Studies 4a and 4b.

Study 1: Fun Activity With Enjoyable or Serious Expected Reward

For Studies 1–3, we chose an activity, Shoot-the-Moon (described below), for which participants have a fun orientation, as demonstrated in previous research (e.g., Pittman, Cooper, & Smith, 1977). It should be noted that Bianco et al. (2003) had previously found that the activity "playing games" was consensu-

ally considered to be "just fun" by undergraduates. In addition, the participants in our studies were told to have as much fun as they could while playing Shoot-the-Moon and that the study itself was about which types of games people find the most entertaining.

In Study 1, the participants were told that there would be a reward that is contingent on their performance in this activity. The instructions about the reward framed it as being either an *enjoyable* reward or a *serious* reward. The dependent measure was whether a participant subsequently chose to do this activity again during the free-choice period. Regulatory fit theory predicts that the choice to repeat the activity will be greater among participants in the enjoyable reward condition than in the serious reward condition.

Method

Participants. Participants were 99 undergraduate students (76.8% women) who received partial credit toward a course research requirement for their participation. Of these 99 participants, 24 were excluded from data analyses. The most important reason for exclusion from the data analyses was if a participant did not reach the criterion of performance required to receive the reward. We wanted to ensure that our analyses were restricted to those participants who entered the free-choice period knowing they had performed well and had received the reward. There were 10 such participants, seven from the "enjoyable" framing condition and three from the "serious" framing condition. The remaining participants were excluded either because of an experimental error during the session or because they expressed suspicion about the true purpose of the study.

The fun game: Shoot-the-Moon. This tabletop game involves manipulating a pair of parallel bars along a fixed track in order to force a steel ball as far as possible up an inclined plane (see Pittman et al., 1977). The ball eventually falls into one of six holes labeled with increasing numbers of points (from 1 to 6). The farther the participant gets the ball to travel, the more points he or she earns. Each participant played the game 10 times or trials. The participants were told that the study was ostensibly a joint project of the psychology and marketing departments on games in order to learn which types of games people find the most *entertaining*. They were told that the object of the game was to get the ball to land in a hole as far as possible from the starting point. They were asked to get into the spirit of the game and have as much *fun* as they could. The game was explicitly described as "entertaining" and "fun" in the instructions because Pittman et al. (1977) had found that the game was an activity that participants found fun when this was emphasized in the instructions.

Procedure. Participants reported to the laboratory individually and were seated at a desk that contained the Shoot-the-Moon game and other activities: two fun computer games and four magazines covering a variety of interests. Participants were told the study involved a collaborative project with the marketing department to examine game entertainment. In upbeat tones, the experimenter explained to participants that they would play Shoot-the-Moon and would later express how much they enjoyed it. The experimenter further described the object of the game and told participants they would play 10 rounds of the game, with a round ending when the ball falls into a hole. The experimenter instructed all participants to try to have as much fun as they could. At this point, instructions diverged for the two experimental conditions. Although the basic information was identical between the two conditions, the description of the reward and means of recording points was framed differently according to condition.

In the *enjoyable reward* condition, the experimenter spoke in an upbeat manner while providing instructions to participants. Participants were told that, "in order to make the game more fun," they would win poker chips every time the ball landed in a hole and that the number attached to each hole indicated how many chips they would get. The chips were tossed into a heavy glass jar on each trial, furthering the fun experience of the game. Participants were also told that if they won more than 15 points over the 10 rounds, they would win a pen. The experimenter emphasized the fun by saying "Please think of this game just like something you would play at a carnival, in which the game is even more fun because you can win a prize at the end." During game play, the experimenter announced the *points* for each *round*. When the game was over, the experimenter dumped the chips in the jar onto a table, counted them in front of participants, and announced whether participants won a pen or not.

In the *serious reward* condition, the experimenter spoke in a serious manner while providing instructions. In addition, each aspect of the reward was described in a serious, as opposed to a fun way. Participants were told that, "in order to motivate their performance on the task," they would earn credits every time the ball landed in a hole. The credits were marked on a dry-erase board with a black marker on each trial. Participants were also told that they would receive a "writing instrument" if they earned more than 15 credits over the 10 trials. In this condition, the experimenter emphasized seriousness of the reward by saying "Please think of this task just as you would a real-life work situation, which is very serious, because you're paid a salary at the end." During game play, the experimenter announced *credits* for each *trial*. After the game, the experimenter tallied the points in front of participants and announced whether participants earned enough credits to receive a writing instrument.

After completing 10 rounds, the participants were told of their performance. Performance did not vary by condition ($M_{enj} = 22.32$; $M_{serious} = 22.35$). All participants included in the analyses reached the criterion necessary to receive the reward (i.e., 15 or more points over 10 trials). The experimenter explained that he or she needed to go to the department office to get the reward and a debriefing form. The experimenter told participants that he or she should be back in about 5 min and that they could do whatever they would like during this time. Participants were told they could play the computer games, play the Shoot-the-Moon game, read magazines, or do nothing. While the experimenter was away, a camera on one of the computers in the experimental room covertly recorded participants' behavior during this free-choice period. After 5 min, the experimenter came back to the laboratory, and participants were probed for suspicion and fully debriefed.

Dependent measure. Participants' behavior during the free-choice period was coded to determine whether participants did or did not choose to play Shoot-the-Moon again. If participants played Shoot-the-Moon at least some of the time, they were coded as "Play." If they did not play Shoot-the-Moon at all during the entire free-choice period, they were coded as "No Play."

Results

The distribution of the number of different times during the free-choice period that a participant chose to do the target activity was too skewed to be treated as continuous. Thus, we conducted a chi-square for test of independence to test whether the number of participants who chose to play Shoot-the-Moon again during the free-choice period was influenced by the framing of manner of reward. The result indicated that there was a significant difference in the number of participants who played the game between the enjoyable reward framing condition and the serious reward framing condition, $\chi^2(1, N = 75) = 4.46$, $p < .05$. Consistent with our prediction, more participants chose to play Shoot-the-Moon again during the free-choice period when the reward was framed in an enjoyable manner (Play, $n = 29$; Not Play, $n = 12$: 70.7% Play) than in a serious manner (Play, $n = 15$; Not Play, $n = 19$: 44.1% Play).

Study 2: Fun Activity With Enjoyable or Serious Unexpected Reward

The purpose of Study 2 was to replicate the finding of Study 1 that when the manner of a performance-contingent reward fits with a person's orientation toward performing the rewarded activity, people's interest in doing the activity again will be greater than when the manner of reward does not fit the orientation. We wanted not only to replicate this basic finding of Study 1 but also to extend it. In Study 1, we used an *expected* performance-contingent reward. This is the type of reward that many previous studies on *intrinsic motivation* have found undermines interest in doing an activity again (e.g., Deci, 1971; Kruglanski et al., 1972; Lepper et al., 1973). According to the intrinsic motivation perspectives, the undermining occurs as a result of mechanisms that function during the original activity engagement, such as experiencing a loss of self-determination from the external pressure of the performance-contingent reward or inferring that the activity is just a means to an end, with the reward being the end, rather than the activity being an end in itself. Given that the standard paradigm in this literature has been a fun activity and a relatively serious reward, the finding of Study 1 for the serious reward framing condition replicates past findings. Study 1 also shows, however, that such undermining is significantly reduced in the enjoyable reward framing condition that *fits* the fun orientation.

What would be predicted if an operant conditioning mechanism was the major determinant of what happened in the expected reward paradigm? As described in the operant conditioning literature (see Kimble, 1961), rewarding an activity under one set of circumstances increases the likelihood that the activity will be repeated later under similar circumstances (the subsequent engagement situation). For the expected reward paradigm of Study 1, the circumstances of the free-choice period are not similar to the circumstances surrounding the reward of the activity. This is precisely because the reward was *expected* in the first set of circumstances. Participants are instructed before they initially engage in the activity that a certain level of performance will yield a reward. There are no such instructions at the beginning of the free-choice period. The participants are given no expectation of receiving a reward as a function of their performance on Shoot-the-Moon during this free-choice period. Thus, the free-choice period is a different set of circumstances from those circumstances when participants first played Shoot-the-Moon. An operant conditioning mechanism, therefore, would predict weak interest in redoing Shoot-the-Moon again in the expected reward paradigm of Study 1. And such weak interest should be found in both the enjoyable reward framing condition and the serious reward framing condition. An operant conditioning mechanism cannot account for the obtained difference between the two framing conditions found in Study 1.

Is there a performance-contingent reward paradigm in which the functioning of an operant conditioning mechanism would predict strong interest in redoing an activity during the free-choice period? Yes, when the reward for reaching a level of performance is unexpected. If participants are not told before performing the activity that a certain level of performance will yield a reward, but after performing the activity and reaching that level they receive a reward, then they could believe that the same thing will happen again during the free-choice period. The reward was not mentioned by the experimenter during the first phase of the session (but it happened anyway), and it was not mentioned by the experimenter during the second free-choice phase of the session. The two sets of circumstances are now similar, which, if an operant conditioning mechanism is active, will produce a strong motive to play Shoot-the-Moon again in the free-choice period.

What about the mechanisms that undermine intrinsic motivation? In an unexpected reward paradigm, the reward occurs, unexpectedly, after participants have already finished doing the activity. Given this, there will be no predicted effects from the postulated intrinsic motivational mechanisms that function when participants initiate and perform an activity. The unexpected reward paradigm, then, allows us to compare the predictions of regulatory fit theory with what would be predicted if an operant conditioning mechanism determined the results. The major difference is that regulatory fit theory predicts that the motive to do the activity again will be different when the unexpected reward is framed in an enjoyable manner versus a serious manner, with the motive being stronger in the former than in the latter.

Method

Participants. Participants were 138 undergraduate students (85.5% women) who received partial course credit. Of these 138 participants, 27 were excluded from data analyses. As in Study 1, the most important reason for exclusion from the data analyses was if a participant did not reach the criterion of performance required to receive the reward because we wanted to restrict our analyses to participants who performed well and had received the reward. There were seven such participants, five from the enjoyable framing condition and two from the serious framing condition. The remaining participants were excluded because they expressed some suspicion about the true nature of the study, believed they were being observed during the free-time portion, or there was an experimenter error during their session.

Procedure. The procedure was identical to Study 1, with the addition of two important changes. The first change was that the reward information was not delivered until after participants finished playing Shoot-the-Moon. The second change was the method by which the experimenter recorded the points that participants earned during the game. In this study, all participants received the

same fun description of the game and were told that the goal was to get 15 points over 10 trials. However, no reward information was given, and point totals were recorded privately by the experimenter. When participants were done with 10 rounds, the experimenter delivered one of two unexpected reward descriptions. All participants included in the analyses reached the criterion necessary to receive the reward (i.e., 15 or more points over 10 trials). As in Study 1, the average performance did not differ between conditions ($M_{enj} = 22.45$, $M_{serious} = 22.30$).

In the enjoyable unexpected reward condition, the experimenter spoke in upbeat tones and told participants that they played the game so well that they won a reward. Participants were told that the experimenter had been keeping track of the points they won on each round by tallying poker chips printed on a sheet of paper to make the game more enjoyable. In order to further ensure the enjoyable framing of the unexpected reward, the experimenter told participants that "the game was like something you would play at a carnival, in which the game is even more enjoyable because you can win a prize at the end." In addition, the experimenter showed participants the paper containing the poker chips printed on it, counted the number of chips participants earned, and, with a purple marker, wrote down the total points with a big circle around it. If participants scored 15 points or more, they were told that they met the goal of 15 points over the 10 rounds and that they won a pen.

In the serious unexpected reward condition, after the 10 rounds were completed, the experimenter spoke in serious tones and told participants that they played the game very well and that they would receive a reward. The experimenter told participants that, in order to motivate their performance, he or she had been keeping track of the credits they received in each round with tally marks on a piece of paper. In order to further ensure the serious framing of the unexpected reward, the experimenter told participants that "the game was like a real-life work situation, which is very serious, because you're paid a salary at the end." The experimenter then showed participants the paper with the tally marks, counted the number of credits participants received, and, with a black pen, wrote down the total points with an underline. If participants scored 15 points or more, they were told that they met the goal of 15 credits over the 10 rounds and that they won a "writing instrument."

The materials and instructions for the free-choice period was the same as in Study 1. After giving the participants 5 min alone for the free-choice period, the experimenter came back to the room, and participants were probed for suspicion and fully debriefed.

Dependent measure. Participants' behavior during the free-choice period was coded to determine whether participants did or did not choose to play Shoot-the-Moon again. If participants played Shoot-the-Moon at least some of the time, they were coded as "Play." If they did not play Shoot-the-Moon at all during the entire free-choice period, they were coded as "No Play."

Results

Again, the distribution of the number of different times during the free-choice period that a participant chose to do the target activity were too skewed to be treated as continuous. Thus, we conducted a chi-square for test of independence to test whether the number of participants who chose to play Shoot-the-Moon again during the free-choice period was influenced by the framing of manner of reward. The result indicated that there was a significant difference in the number of participants who played the game between the enjoyable reward framing condition and the serious reward framing condition, $\chi^2(1, N = 111) = 6.25$, $p < .05$. Consistent with our prediction, more participants chose to play Shoot-the-Moon again during the free-choice period when the reward was framed in an enjoyable manner (Play, $n = 42$; Not Play, $n = 23$: 64.6% Play) than in a serious manner (Play, $n = 22$; Not Play, $n = 24$: 47.8% Play).

Study 3: Fun Activity With Enjoyable or Serious Free-Choice Decision

As mentioned earlier, Study 3 was designed to go beyond the motivational effects of rewards to address the more general question of how regulatory fit can affect interest in doing an activity again. In Studies 1 and 2, we used the manner of reward, enjoyable or serious, as a method to sustain (fit) or disrupt (nonfit) the participants' orientation to the activity. According to regulatory fit theory, however, an orientation to an activity can be sustained or disrupted by other surrounding situational factors. It is the manner of goal pursuit that matters. In Study 3, we tested this by having no reward at all and only the free-choice period where interest in repeating an activity was measured. It was the free-choice period itself that was framed so that the manner of deciding what to do either sustained ("enjoyable decision making") or disrupted ("serious decision making") the fun activity orientation. It is predicted that participants will be more interested in doing the fun activity again when the manner of deciding what to do is enjoyable rather than serious.

Method

Participants. Participants were 147 undergraduate students (70.1% women) who received partial credit toward a course for their participation. Of these 147 participants, 35 participants were excluded from data analyses. As in Studies 1 and 2, the most important reason to exclude a participant from data analyses was if he or she did not reach a criterion of performance that was established on the basis of what was required in the previous studies to receive the reward. There were eight such participants, two from the enjoyable framing condition and six from the serious framing condition. The remaining participants were excluded because they expressed some suspicion about the true nature of the study.

Procedure. The procedure was almost identical to the previous two studies with two important changes. First, there was no reward in this study. When participants were done with 10 trials, the experimenter simply announced the points and told participants that they did very well in an upbeat manner. The second change is that the framing of the free time was manipulated. To assure that this feedback was reasonable for all participants, and to create comparability between this and the previous two studies, any participant who did not reach a criterion of 15 or more points over 10 trials was excluded. As before, average performance did not vary by condition ($M_{enj} = 22.25$; $M_{serious} = 22.39$).

In the enjoyable open-period condition, the experimenter told participants that he or she had to go to the department office to get a debriefing form and should be back in about 5 min. Participants

were told that they could play any of the activities in the meantime, including computer games, Shoot-the-Moon, read magazines, or do nothing if they wished. They were told: "This is your free time! So please feel free to do anything you want. You can think of this as the 'free time' portion of the experiment," before leaving the room. In the serious open-period condition, the experimenter provided the same general instructions except that the participants were told: "It's important that you use this time wisely and manage it in an appropriate and prudent manner. So please think of this as the 'time management' portion of the experiment," before leaving the room.

While the experimenter was away for 5 min, participants' behavior was covertly recorded. After the free-time period, the experimenter came back to the laboratory, and participants were probed for suspicion and fully debriefed.

Dependent measure. Participants' behavior during the free-choice period was coded to determine whether participants did or did not choose to play Shoot-the-Moon again. If participants played Shoot-the-Moon at least some of the time, they were coded as "Play." If they did not play Shoot-the-Moon at all during the entire free-choice period, they were coded as "No Play."

Results

Once again, the distribution of the number of different times during the free-choice period that a participant chose to do the target activity were too skewed to be treated as continuous. Thus, we conducted a chi-square for test of independence to test whether the number of participants who chose to play Shoot-the-Moon again during the free-choice period was influenced by the framing of the manner of decision making during the free-choice period. The result indicated that there was a significant difference in the number of participants who played the game between the enjoyable decision-making framing condition and the serious decision-making framing condition, $\chi^2(1, N = 112) = 3.06$, $p = .08$. Consistent with our prediction, more participants chose to play Shoot-the-Moon again during the free-choice period when the decision making during the free-choice period was framed in an enjoyable manner (Play, $n = 39$; Not Play, $n = 22$: 63.9% Play) than in a serious manner (Play, $n = 25$; Not Play, $n = 26$: 49.0% Play).

Studies 4a and 4b: Fun or Important Task

Studies 4a and 4b had a few aims. One aim was to replicate the regulatory fit effects found in Study 1 and Study 3 for the fun activity—stronger interest in doing the fun activity again in the enjoyable manner framing condition than in the serious manner framing condition—when both the expected reward and the free-choice period were independently manipulated in the same study. In analyzing the data from Study 4a, we address both the independent effects and the combined effects of manipulating the reward and the free-choice period.

A second aim was to replicate prior regulatory fit studies, which show that regulatory fit is independent of pleasant mood (e.g., Cesario, Grant, & Higgins, 2004; Cesario & Higgins, 2008). To test this, we included a measure of hedonic mood (i.e., feeling positive vs. feeling negative).

The most important aim of Studies 4a and 4b was to address the possibility discussed earlier that there might be something about a surrounding situation that supports an enjoyable (vs. a serious) manner of engagement, which, by itself, increases people's interest in doing whatever they were doing before. As we noted in the introduction, it is not obvious why this should be the case. Indeed, the most general mood model—positive mood (enjoyable manner) versus negative mood (serious)—would actually predict the opposite. Still, it would be useful to demonstrate experimentally that our effects cannot be accounted for by something about an enjoyable surrounding situation that increases people's interest in doing an activity again. This predicts a simple main effect of spending more time with the focal activity during the free-choice period when the surrounding situation supports an enjoyable manner of engagement rather than a serious manner.

In contrast, we predict that the effect of an enjoyable versus a serious manner of engagement depends on whether the orientation to the task activity is fun or important. We predict an interaction. We predict a reversal when individuals' orientation toward an activity is important rather than fun—a serious surrounding situation should produce more interest in doing an important activity again than an enjoyable surrounding situation. We tested this predicted reversal for an "important" activity in both Study 4a and Study 4b. Study 4b was designed to address some other questions as well, which we discuss after presenting the findings for Study 4a.

The design of Study 4a allowed us to examine for the first time the effect on interest in doing an activity again from the combined framing of the manner of reward and the manner of decision making during the free-choice period (i.e., enjoyable reward and enjoyable free-choice framing; serious reward and serious free-choice framing). We predicted the following interaction: for the fun activity, more interest in doing the activity again in the enjoyable reward and free-choice framing condition than in the serious reward and free-choice framing condition; but for the important activity, more interest in doing the activity again in the serious reward and free-choice framing condition than in the enjoyable reward and free-choice framing condition. If this predicted interaction effect is obtained, then it would strongly support regulatory fit theory and clearly demonstrate that something about enjoyable framing per se is not the mechanism underlying greater interest in doing an activity again. If it were, then there would simply be a main effect of enjoyable versus serious framing.

Study 4a

Method

Participants. Participants were 63 undergraduates from a different university than in Studies 1–3. (Unfortunately, the gender coding data was lost.) Of these 63 participants, 11 participants were excluded from data analyses. As in Studies 1–3, the most important reason to exclude a participant from data analyses was if he or she did not reach the criterion of performance required to receive the reward. The distribution of these participants did not follow any pattern, with nine from the "fun" activity condition and two from the "important" activity condition; six from the "enjoyable" reward condition and five from the "serious" reward condi-

tion; and six from the "enjoyable" free-time condition and five from the "serious" free-time condition.

Procedure. Most of the procedure was the same as that used in Study 1 and Study 3. The main difference was that a new important activity was added as an experimental condition.

Activity orientation. Participants were randomly assigned to perform either a fun or an important activity. To ensure that participants adopted the planned fun or important orientation toward these activities, the verbal instructions for the activities reinforced the planned orientation. The fun activity was the Shoot-the-Moon game from the first three studies; the instructions were identical to those from Study 1, which emphasized the fun nature of the game. As before, all participants who did not meet the 15-point criterion for receiving the reward were excluded.

The important orientation activity was a "financial duties" task, which is a regression prediction task carried out on computer (see Bianco et al., 2003). As was mentioned in the introduction, Bianco et al. (2003) used this task as the important orientation activity because previous research had shown that undergraduates had a clear consensus or shared belief that the activity of "financial duties" was basically "just important."

Each participant was told to assume the role of a student advisor and rate the financial standing of other students on the basis of their management of three types of transactions—checking accounts, savings accounts, and credit card payments. In this way, the participants would supposedly have the opportunity to obtain practical money-management skills to help them after college. The participants were given each target's scores for each of the transactions (ranging from 10 to 150 relative to a norm of 100). Their task was to weigh the three scores to come up with their prediction of each target's overall financial standing. After making their prediction, the participants were shown the "actual financial index" for that target, thus giving feedback about how the three transactions should be weighted in predicting scores for other targets. They were told that *we expected they would find this task to be important and personally relevant* and that first-year financial accounting students in the graduate business school had found this task to be helpful in developing basic management and finance skills. It was emphasized that this task was *meant to prepare them for a significant set of experiences they would encounter throughout their lifetime*, and thus it was important to do it and to do it repeatedly in order to achieve its full benefits. Each participant performed 10 trials of the task.

Expected reward framing. After hearing the description of the task, participants were given one of two reward framing descriptions: enjoyable reward or serious reward. Descriptions of the enjoyable and serious reward were the same as those in Study 1 (with the exception that, for consistency, the activity was called a "game" for the fun task orientation condition but was called a "task" for the important task orientation condition).

Free-choice period framing. The third manipulated variable was free-choice period framing. After completing the main task, all participants were given a 5-min free-choice period. It was described in either an enjoyable or a serious way using the same wording as in Study 3.

Pleasant mood measure. Questions about how *good*, *happy*, *dejected* (reversed), *relaxed*, *positive*, *cheerful*, *tense* (reversed), and *content* the participants felt immediately after the free-choice period served as a measure of pleasant mood, with the answers expressed on 9-point scales ranging from 1 (*not at all*) to 9 (*extremely*). The purpose of this measure, given out right after the free-choice period, was to control statistically for participants' mood in order to demonstrate that an obtained fit effect was independent of mood. A measure of pleasant mood was calculated from the average of these items and was included as a covariate in all analyses. (Items within this measure were presented in one of two orders. This was included as a factor in all analyses, and it yielded no significant effects.)

Results and Discussion

Unlike in Studies 1–3, in which we used participants from a different university than in Study 4a, in Study 4a the distribution of the number of different times during the free-choice period that a participant chose to do the target activity had sufficient normality to be treated as continuous rather than as binary. Thus, this measure served as the dependent variable. Because participants within the two different activity orientation conditions—fun versus important— engaged in different mean numbers and ranges of times choosing to do the target activity, we first separately converted participants' frequency of choices to do the target activity to z scores within each activity orientation condition. A $2 \times 2 \times 2$ between-participants ANOVA, with the factors activity orientation (fun; important), reward framing (enjoyable; serious), and free-choice period framing (enjoyable; serious), performed on participants' standardized free-choice scores, yielded several effects.

First, as predicted and shown in Figure 1, there was a significant interaction between activity orientation and framing of free-choice period, $F(1, 42) = 8.30$, $p = .006$. There was no higher order three-way interaction with reward framing. Participants were more interested in doing the activity again when the free-choice period was represented in a manner that fit their orientation toward the task. Specifically, participants chose to do the activity more when

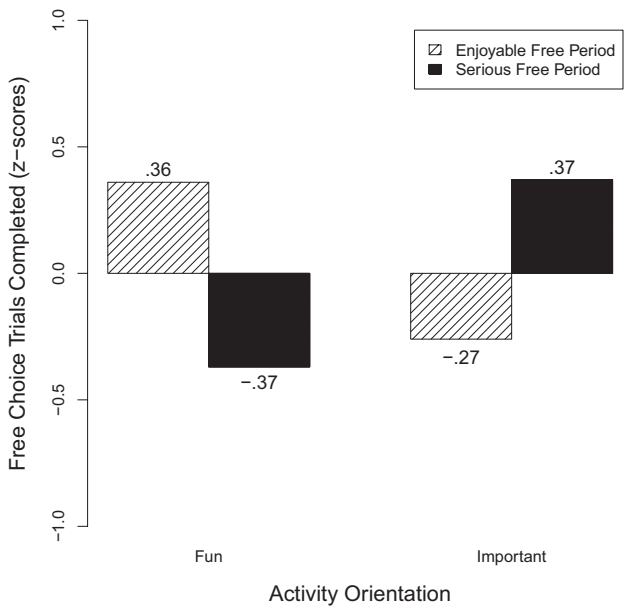

Figure 1. Mean number of trials (z scores) completed during free-choice time, by activity orientation and framing of free-choice period in Study 4a.

the fun activity was paired with an enjoyable, as opposed to a serious, free-choice period framing ($M_{enj} = 0.36$, $SD_{enj} = 1.07$ vs. $M_{serious} = -0.37$, $SD_{serious} = 1.13$; simple contrast $p < .05$) and more when the important activity was paired with a serious, as opposed to an enjoyable, free-choice period framing ($M_{serious} = 0.37$, $SD_{serious} = 1.42$ vs. $M_{enj} = -0.26$, $SD_{enj} = 0.76$; simple contrast, $p = .10$).

The finding for the fun activity replicates the results of Study 3. That is, the participants were more interested in doing a fun activity again when deciding what to do during the free-choice period was framed as an enjoyable decision than when it was framed as a serious decision. As discussed earlier, this finding demonstrates that regulatory fit can affect interest in doing an activity again simply as a function of the manner in which decisions are made during a free-choice period. This effect was independent of the nature of the reward and independent of participants' hedonic mood, given that participants' mood ratings were included as a covariate in the analyses (and which itself had no significant effect on free-period behavior, $p = .19$). In addition, the finding for the important activity shows that it is not simply something about enjoyable framing that increases interest in doing something again because participants with an important activity did not choose to do it more during the free-choice period when decision making was framed as enjoyable than as serious. Indeed, there was a (borderline significant) reversal with participants choosing to do the important activity more when decision making was framed as serious than as enjoyable. And this effect for the important activity was also independent of the nature of the reward and independent of participants' hedonic mood.

In addition to the effect above, a near significant Task Orientation × Expected Reward Framing interaction, $F(1, 42) = 3.20$, $p = .08$, replicated the results of Study 1 regarding the effect of expected reward framing on interest in doing the fun activity again. As shown in Figure 2, participants with the fun activity chose to do the fun activity more during the free-choice period when the manner of the expected reward was enjoyable than when it was serious ($M_{enj} = 0.45$, $SD_{enj} = 1.34$ vs. $M_{serious} = -0.44$, $SD_{serious} = 0.82$, $p < .06$). And, again, this effect was not simply something about enjoyable framing that increases interest in doing something again because participants with an important activity did not choose to do it more during the free-choice period when the reward was framed as enjoyable than as serious. Instead, there was basically no difference at all between the two framing conditions ($M_{serious} = -0.01$, $SD_{serious} = 1.06$ vs. $M_{enj} = 0.05$, $SD_{enj} = 1.21$).

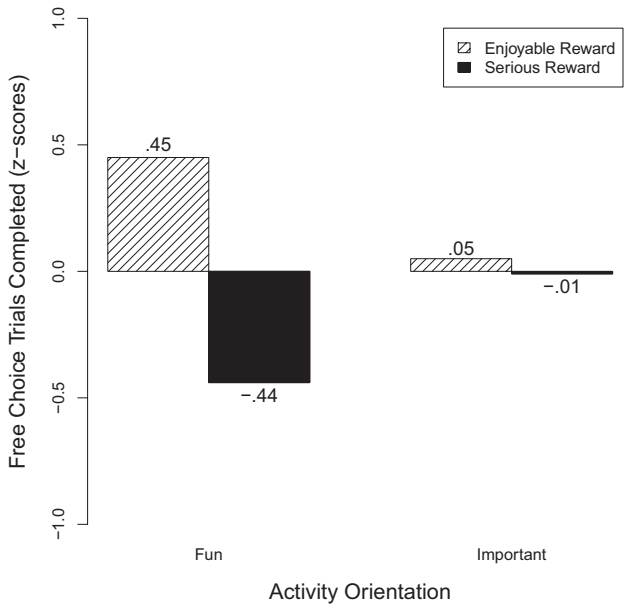

Figure 2. Mean number of trials (*z* scores) completed during free-choice time, by activity orientation and framing of expected reward in Study 4a.

As discussed earlier, the design of Study 4a also allowed us to examine for the first time the effect on interest in doing an activity again from the combined framing of the reward and the free-choice period—either enjoyable reward and enjoyable free-choice framing or serious reward and serious free-choice framing. That is, the data can also be analyzed by examining only those conditions in which participants experienced the reward and the free period in a consistent manner—either consistent enjoyable or consistent serious— thereby collapsing the design into a 2 (activity orientation: fun vs. important) × 2 (reward and free-period framing: both enjoyable vs. both serious). We predicted the following interaction: for the fun activity, more interest in doing the activity again in the enjoyable reward and enjoyable free-choice framing condition than in the serious reward and serious free-choice framing; but for the important activity, more interest in doing the activity again in the serious reward and serious free-choice framing condition than in the enjoyable reward and enjoyable free-choice framing.

First, to test for the interaction predicted by regulatory fit theory, we examined only those conditions in which the reward framing and the free-choice period framing were the same—the enjoyable reward and enjoyable free-choice framing condition and the serious reward and serious free-choice framing condition. A 2 × 2 between-participants ANOVA with the factors activity orientation (fun; important) and reward and free-choice framing (enjoyable; serious) yielded the predicted two-way interaction, $F(1, 18) = 20.06$, $p < .001$. Importantly, there was no significant main effect of whether the reward and free-choice framing was enjoyable versus serious ($F < 1$). Thus, the results do not derive from something about an enjoyable surrounding situation generally increasing interest in doing the focal activity again.

As predicted and shown in Figure 3, participants in the fun activity condition chose to do significantly more of that activity during the free-choice period when they were in the enjoyable reward and enjoyable free-choice framing condition ($M = 1.09$, $SD = 0.63$) than in the serious reward and serious free-choice framing condition ($M = -0.71$, $SD = 0.48$; $p < .001$) for the contrast test. For participants in the important activity condition, there was a nonsignificant reversal. As expected, now participants chose to do more of the important activity during the free-choice period when they were in the serious reward and serious free-choice framing condition ($M = 0.11$, $SD = 1.22$) than in the enjoyable reward and enjoyable free-choice framing condition ($M = -0.44$, $SD = 0.29$; $p < .13$) for the contrast test.

Also shown in Figure 3 are two other important contrasts that underlie the significant overall interaction. First, participants within the enjoyable reward and enjoyable free-choice framing condition chose to do significantly more of the focal activity during the free-choice period when the focal activity was the "fun" activity ($M = 1.09$, $SD = 0.63$) than when it was the important

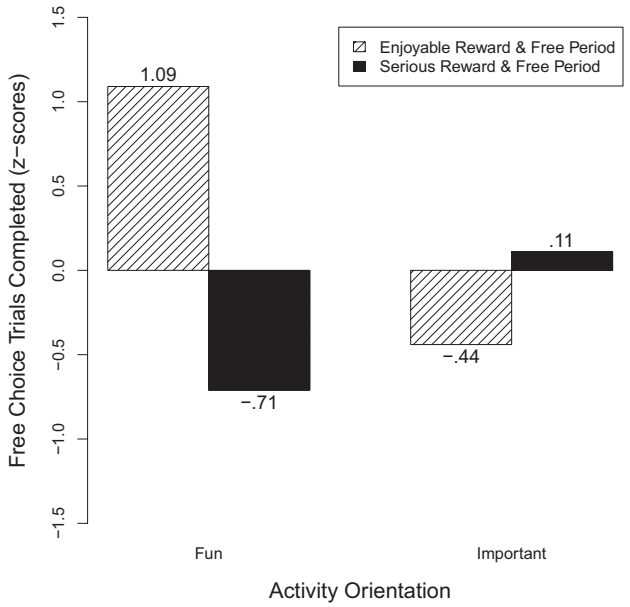

Figure 3. Mean number of trials (*z* scores) completed during free-choice time, by activity orientation and combined reward/free-choice framing in Study 4a.

activity ($M = -0.44$, $SD = 0.29$, $p = .001$) for the contrast test. Thus, it was not the case that an enjoyable surrounding situation simply made everyone more interested in doing again the activity they had done before, because the effect of the enjoyable surrounding situation in increasing interest in doing the activity again was much greater for the fun activity than the important activity—as predicted by regulatory fit theory. Second, participants within the serious reward and serious free-choice framing condition chose to do significantly more of the focal activity during the free-choice period when the focal activity was the "important" activity ($M = 0.11$, $SD = 1.22$) than when it was the fun activity ($M = -0.71$, $SD = 0.48$, $p = .04$) for the contrast test. This is precisely the pattern predicted by regulatory fit theory.

To look at this regulatory fit effect more closely, we directly compared participants' interest in doing the focal activity again for the two fit conditions versus the two nonfit conditions. Overall, the participants chose to do the focal activity again during the free-choice period much more in the fit conditions (fun activity with enjoyable reward and enjoyable free-choice framing; important activity with serious reward and serious free-choice framing: $M = 14.7$ trials) than in the nonfit conditions (fun activity with serious reward and serious free-choice framing; important activity with enjoyable reward and enjoyable free-choice framing: $M = 1.9$ trials), $F(1, 20) = 11.81$, $p = .003$—over seven times as much in the fit than in the nonfit conditions! And, once again, this substantial fit effect was found with pleasant mood being statistically controlled.

It should also be noted that there were no main effects on choosing to do the focal activity again as a function of whether the activity itself was fun or important or whether the overall framing was enjoyable or serious. What mattered for interest in doing the activity again was how the orientation of the activity as fun or important related to the situational support for an enjoyable or serious manner of engagement. That is, what mattered was the fit.

Study 4b

The major aim of Study 4a was to show that an enjoyable situation of engagement is not the determining factor that increases interest in doing an activity again. Rather, it is the fit between the orientation toward an activity and the manner of engagement that is supported by the surrounding situation. To demonstrate this, we needed to show that a surrounding situation that supports a serious situation of engagement can also increase interest in doing an activity again when individuals' orientation toward the activity is important rather than fun. Whereas Studies 1–3 all showed how a situation that supports an enjoyable manner of engagement increases interest in doing a fun activity again, only Study 4a shows how a situation that supports a serious manner of engagement increases interest in doing an important activity again. One of the aims of Study 4b was to obtain additional support for this key finding.

Study 4b was designed to address some other issues as well. One issue was a potential limitation in the methodology of Studies 1–4a. In these studies, the same experimenter delivered all of the instructions. This meant that it was possible for participants to notice a change in the experimenter's demeanor when the experimenter introduced the task activity and when the experimenter framed the reward situation and/or the free-choice situation. It is in the nonfit conditions, in particular, that participants might have detected a change in the experimenter's style of expression, and this inconsistency within the experimenter might have affected how participants responded to doing the activity again. For instance, perhaps the participants were confused by an experimenter suddenly acting in a serious manner during the free-choice situation after acting in a more fun manner while introducing the task activity. This confusion about the experimenter might have caused participants to avoid the original activity when later given a choice to do it or something else.

Although there are reasons to believe that this does not explain the findings of Studies 1–4a, including the fact that, if anything, confusion or anxiety might predict becoming more conservative and sticking with the status quo, we believed that it should be addressed directly in Study 4b in two ways. First, the entire set of task instructions were delivered by computer, with the experimenter completely removed from the laboratory room. The experimenter returned only to track participants' performance and deliver the reward instructions. In this way, there was no change in the experimenter's demeanor that could be observed by participants, and the different information about the task and the surrounding situation was delivered by different sources, including a computer. Second, we measured participants' levels of confusion to check on and statistically control for this possible factor.

A second issue addressed in Study 4b was that, although the overall regulatory fit effect in Study 4a was large and significant, the sample size in each condition was somewhat low. This could have contributed to the contrast effect between enjoyable versus serious framing not being significant for the important activity despite its being in the predicted direction (i.e., more time spent on the important focal activity when the surrounding situation was serious than enjoyable). By increasing power, this predicted effect

was more likely to reach significance. Moreover, Study 4a was the only one of our studies in which we used an "important" activity; we used just a fun activity with the other three studies. Thus, Study 4b addressed the issues of reliability and replicability by greatly increasing the sample size in each condition and using the important activity once again (the "financial duties" task), with either an enjoyable reward and free-choice surrounding situation or a serious reward and free-choice surrounding situation.

The third issue addressed in Study 4b was that Study 4a did not have a manipulation check that confirmed that participants' orientation toward the financial duties task was, indeed, important rather than fun. Although it was strongly emphasized in the task instructions that the task was an important one, and this task has been found to be consensually perceived as "just important" in prior research (Bianco et al., 2003), it is still useful to confirm for our participants that their orientation toward this activity is important rather than fun. Therefore, after the task instructions were given, all participants were provided with a measure assessing the degree to which they perceived the task as important rather than fun.

Method

Participants. Participants were 87 undergraduates (67.8% female) from the same university as in Studies 1–3. (There were no significant effects associated with gender.) Twenty participants did not reach the performance criterion for the financial duties task. There are two important points regarding this fact. First, the percentages of failures did not differ between the enjoyable reward and enjoyable free-choice condition (23.5%) and the serious reward and serious free-choice condition (22.2%). Second, the pattern or significance of the results do not change in any way whether these participants are included or excluded in the analyses. Two participants expressed suspicion about the true nature of the study, leaving a final sample of 65. Again, however, analyses with the full sample reveal the same pattern and significance levels of the effects reported below.

Procedure. The procedure was generally similar to that of Study 4a, with a few minor but important changes. After arriving in the lab, the experimenter informed the participant that the computer would assign him or her to complete a task and provide instructions for it. The experimenter began the "Financial Duties" program and then left the room. The computer delivered the same instructions for this task as described in Study 4a. After the instructions were complete, the participant then found the experimenter, who gave the participant a short demographic form to complete. The actual purpose of this form was to assess the degree to which participants perceived the financial duties task to be important. Participants rated their orientation toward the task on a scale ranging from 1 (*very fun activity*) to 9 (*very important activity*).

Following this rating, the methodology then proceeded as in Study 4a. The expected reward was framed to create either an enjoyable or a serious situation, and the free choice was framed to be consistent with the reward framing—thus, creating either an enjoyable reward and enjoyable free-choice condition or a serious reward and serious free-choice condition. As in Study 4a, the dependent measure was the number of trials of the financial duties task that was performed during the free-choice period.

At the conclusion of the task, participants rated how confused they were when they heard the experimenter's instructions on a scale ranging from 0 (*not at all confused*) to 10 (*extremely confused*).

Results and Discussion

Manipulation check. Examination of participants' perceptions of the financial duties task provided clear evidence that their orientation toward this task was important rather than fun. The mean rating was 6.78 ($SD = 1.07$), with only one participant rating the task below the midpoint of the scale (midpoint = 5).

Ratings of confusion. Next, examination of participants' ratings of confusion revealed a mean rating of 1.02 ($SD = 2.02$), with 95.2% of the sample falling below the midpoint of the scale (midpoint = 5). This indicates that the participants were clearly not confused. Nonetheless, we included the participants' confusion ratings as a covariate in our analysis.

Behavior during the free-choice period. We performed a 2 (enjoyable reward and enjoyable free-choice condition; serious reward and serious free-choice condition) between-participants analysis of covariance (ANCOVA), with confusion ratings included as a covariate and the number of financial duties trials performed during free time as the dependent variable. This analysis revealed a strong and significant effect of framing, $F(1, 60) = 30.39$, $p < .001$, $\eta^2 = .34$. Participants in the serious reward and serious free-choice condition performed many more financial duties trials ($M = 7.07$, $SD = 4.60$) than participants in the enjoyable reward and enjoyable free-choice condition ($M = 1.61$, $SD = 3.49$). The basic results did not change when we repeated this analysis without including participants' confusion ratings as a covariate.

The results of Study 4b indicated that participants' orientation toward the financial duties task was, indeed, important rather than fun. Replicating Study 4a, the results also showed a significant and strong tendency to engage more in the financial duties task in the serious reward and serious free-choice condition (the fit condition) than in the enjoyable reward and enjoyable free-choice condition (the nonfit condition). And this fit effect was not due to the enjoyable reward and enjoyable free-choice condition, creating more confusion than the serious reward and serious free-choice condition.

General Discussion and Conclusions

For a long time, psychologists have studied the mechanisms underlying increases and decreases in actors' interest in doing something. In studying these mechanisms, the research emphasis has been different in different areas of psychology. In the area of operant conditioning in animals (including humans as animals), and especially the research inspired by Skinner's ideas (see Skinner, 1953), the emphasis was on how discriminant reward contingencies associated with activity engagement can increase interest in doing an activity again. In the social psychological area of intrinsic motivation, however, the emphasis was on how activity engagement involving a performance-contingent reward can decrease interest in doing an activity again. The positive reinforcement, self-determination, and inferential mechanisms that were identified in these research programs have provided critical an-

swers to why people's interest in doing something again can increase or decrease depending on surrounding situational conditions.

The results of the present studies suggest that the mechanism of regulatory fit provides an additional answer to why people's interest in doing something again can increase or decrease. Specifically, our results show that when the situation surrounding an activity supports a manner of engagement that sustains people's orientation to the activity (a fit), interest in doing the activity again will be stronger than when the surrounding situation supports a manner of engagement that disrupts people's orientation (a nonfit). We investigated two kinds of surrounding situations. One kind of surrounding situation was a contingent reward that supported a manner of engagement (enjoyable vs. serious) that did or did not fit participants' activity orientation (fun vs. important). Another kind of surrounding situation was a free-choice period that supported a manner of engagement (enjoyable vs. serious) that did or did not fit participants' activity orientation (fun vs. important). When participants' orientation toward an activity was fun, these two kinds of surrounding situational factors (Studies 1, 2, 3, and 4a) produced stronger interest in doing the activity again if the surrounding situation supported an enjoyable manner of engagement (i.e., a reward "like a carnival prize"; a "free time" choice period) rather than a serious manner of engagement (i.e., a reward "like a job salary"; a "time management" choice period). This effect was independent of participants' hedonic mood.

What might be producing our results other than our proposed regulatory fit effect? For Studies 1–3, there was the predicted effect of greater interest in doing the fun Shoot-the-Moon task again when it was surrounded by either an enjoyable (vs. a serious) reward or an enjoyable (vs. a serious) free period. There is the possibility for these studies that a surrounding situation that supports an enjoyable (vs. a serious) manner of engagement—whether that situation is associated with the reward or with the free period—somehow increases people's interest in doing whatever they were doing before. Studies 4a and 4b were designed to address this possibility. If there were such an effect from an enjoyable surrounding situation, then participants in the free period would also be more interested in doing an important financial duties task that they were doing before when the surrounding situations are enjoyable reward and enjoyable free choice than when they are serious reward and serious free choice. Our regulatory fit proposal, however, makes the opposite prediction. Consistent with our prediction, Studies 4a and 4b showed participants engaging more in the important financial duties task during the free period when the surrounding situations were serious reward and serious free choice than enjoyable reward and enjoyable free choice.

There is a potential limitation of the design of Studies 4a and 4b that needs to be addressed, however. In these studies, as well as in Study 3, the situation in which the dependent measure was collected was experimentally framed to be enjoyable or serious. Might the differential framing of the free-period instructions convey different expectations to participants regarding which activities are more appropriate to do? We do not believe so. In both the enjoyable and serious framing conditions, the participants were given the same general instructions that, while the experimenter was away for 5 or so minutes, they could play any of the activities, which included not only the task they had been working on but also computer games to play or magazines to read, or they could choose to do nothing if they wished. These general instructions clearly state that the participant can choose what to do during the free period. In the enjoyable open-period condition, they were also told that this was their "free time": "So please feel free to do anything you want. You can think of this as the 'free time' portion of the experiment." In the serious open-period condition, they were told: "It's important that you use this time wisely and manage it in an appropriate and prudent manner. So please think of this as the 'time management' portion of the experiment."

The purpose of this different framing was to create different surrounding situations while the participants chose how much to engage in the different activities available to them—an open-period situation with either a more enjoyable manner or a more serious manner. The instructions did not demand that participants do the fun task again or the important task again. In fact, the instructions explicitly stated that the participants could do any of the activities available to them or do nothing if they wished. However, might the instructions have created an atmosphere with different expectations about was appropriate to do? Might the "time management" instructions have demanded doing an important activity like the financial duties task rather than something else? We do not think that this is likely. Individuals can arrive at an amusement park knowing that they have only a limited period there, and thus they need to manage their time wisely to ensure that they have done all of their favorite fun activities before they must leave. Serious and prudent time management does not mean that one cannot engage in fun activities. Our participants, for example, could have managed their time to make sure that they had time to play a computer game. And if they did feel that they wanted to do something important, then they could have read important (vs. fun) magazine articles rather than doing the financial duties task again because, in addition to fun magazines, they had important magazines available to them, such as current events and political magazines.

Although we do not believe that our different free-period instructions created simple demand effects on whether to do the original task again, we believe that some feeling of "what is appropriate" could have been created by the instructions. Indeed, the notion that different instructions can convey different expectations about what is appropriate to do is related to our general aim of identifying surrounding conditions that increase or decrease interest in redoing certain activities. In this respect, it should be noted that different expectations about what is appropriate to do has a closer family resemblance to regulatory fit as a mechanism than operant conditioning or intrinsic motivation as mechanisms. According to regulatory fit theory (Higgins, 2000, 2005), when there is a fit between individuals' orientation to a task and the manner of activity pursuit suggested by the surrounding situation, they "feel right" about engaging in the task.

This "feels right" experience could have a "what is appropriate" element to it given the evidence from previous research that what "feels right" can transfer to what "is right" (see Camacho, Higgins, & Luger, 2003). But rather than being a direct effect of the instructions, this feeling of "rightness" or "what is appropriate" would be created by the fit between the suggested manner of approaching the free period (e.g., serious) and the orientation toward the earlier task that is available to do again during the free period (e.g., important). And it should be emphasized as well that

our proposed fit effect is not restricted to the case in which different free-period instructions create different surrounding situations affecting what feels right or feels appropriate to do. In Studies 1 and 2, we found, as predicted, a fit effect on redoing the fun-oriented task from a surrounding enjoyable (vs. serious) reward situation even though the participants later received the *same* free-period instructions.

We should also note that regulatory fit as a mechanism that can increase or decrease interest in doing an activity again is not restricted to the case of people having a fun or an important orientation toward an activity. Although the present studies are the first to examine regulatory fit effects on interest in redoing an activity, there are previous studies which have found regulatory fit effects on the value of activities and choices that involved other kinds of activity orientations, such as promotion, prevention, locomotion, and assessment orientations (e.g., Avnet & Higgins, 2003; Freitas & Higgins, 2002; Higgins et al., 2003). We would expect, for example, that an eager surrounding situation associated with a reward or with a free period would produce a stronger motivation to do a promotion-oriented activity again than a vigilant surrounding situation, and the reverse for a prevention-oriented activity.

We wish to emphasize that support in our studies for the role of regulatory fit in influencing people's interest in doing an activity again does not challenge the role of other previously identified mechanisms. Each mechanism requires different surrounding situations, and thus they can apply under different conditions. There can also be conditions in which more than one mechanism would function at the same time, and then their effects on increasing or decreasing interest could be in the same direction or in opposite directions. Future research needs to investigate systematically the conditions under which the different mechanisms function alone or function in either supportive or conflicting combinations.

It is possible, for example, that regulatory fit may have combined with other mechanisms in previous studies to support the effects that were found in those studies. As one instance, the classic evidence from the operant conditioning literature for rewards increasing interest in doing an activity again typically involves important target activities within serious situations, such as a student being rewarded by a good grade for studying hard before a test, and these conditions constitute a regulatory fit. As another instance, the classic evidence from the intrinsic motivation literature for rewards decreasing interest in doing an activity again typically involves fun target activities within serious situations, such as coloring pictures to get an award, and these conditions constitute a regulatory nonfit. It would be useful in future research to find ways to test the independent and combined impact of these different mechanisms on increasing or decreasing interest when the surrounding situational conditions are present for each of them. What is clear from the present studies, however, is that the overall pattern of results is consistent with regulatory fit playing a role in increasing or decreasing interest that is independent of the other mechanisms.

What is unique about the regulatory fit mechanism is that it concerns the relation between actors' orientation to an activity and the manner of engagement that is supported by the surrounding situation. It is neither about the orientation in itself nor the manner of engagement in itself. It is about the relation between them. Because of this, the same orientation, such as a fun orientation, can strengthen or weaken interest in doing an activity again depending on whether the manner of engagement induced by the surrounding situation sustains (e.g., enjoyable) or disrupts (e.g., serious) that orientation. Likewise, the same manner of engagement induced by the surrounding situation, such as an enjoyable manner, can strengthen or weaken interest in doing an activity again depending on whether it sustains the activity orientation (e.g., a fun orientation) or disrupts it (e.g., an important orientation). Another significant feature of the regulatory fit mechanism is that the surrounding situation that supports the manner of engagement can be the situation when the activity is initially engaged (e.g., expected reward), the situation immediately after completion of the initial engagement (e.g., unexpected reward), or the situation in which the decision to do the activity again is made.

Because regulatory fit concerns the relation between activity orientation and the manner of engagement, and there are multiple kinds of surrounding situations that support the manner of engagement, there is considerable flexibility in how fit or nonfit can be created. This has important practical implications. To illustrate, let us return to the examples at the beginning of this article—increasing interest in studying and decreasing interest in eating junk food.

In order to increase interest in studying, we need to begin by recognizing (based on our own research among college undergraduates) that most students' orientation to studying is as an "important" activity rather than as a "fun" activity. Students typically do not study as an end in itself but as a means to an end. Given this, to increase interest in studying, one might consider expected rewards for studying that are also forecasted and received when studying is chosen in a free-choice situation. This classic operant conditioning mechanism should be effective. The power of the expected reward could be strengthened further by ensuring that the manner of engaging in studying as an important activity is framed in a serious manner in order to create a fit. And beyond operant reward conditioning, the free-choice situation itself, in which students decide whether to study again, could be framed in a serious manner ("time management") in order once again to create a fit with studying as an important activity (and a nonfit with a fun competing option like partying instead).

Let us now consider what to do in order to decrease interest in eating junk food. Unlike studying, most students' orientation to eating junk food is as a "fun" activity rather than as an "important" activity. Students eat junk food as an end in itself. Given this, to decrease interest in eating junk food one might consider a mechanism that undermines intrinsic motivation. For example, an external reason for eating junk food could be highlighted, such as the fact that people eat junk food in order to give themselves a quick boost of energy. This would produce an exogenous inference for eating junk food, which should undermine intrinsic motivation to eat junk food. Alternatively, highlighting extrinsic social pressures for eating junk food would make it feel less autonomous and should undermine intrinsic motivation. The undermining of the fun activity of eating junk food could be intensified by framing the choice of what to eat for a quick boost of energy as a serious decision-making situation that should, for instance, take into account the price of the food and what health benefits the food provides. This serious manner of engaging in the decision would create a nonfit with eating junk food as a fun activity.

The above examples highlight how regulatory fit as a mechanism for increasing or decreasing interest in doing something again should be seen as complementary to other mechanisms rather than as competing. In these examples, regulatory fit is combined with another mechanism either to strengthen interest in doing an activity again (e.g., combined with operant conditioning to strengthen studying) or to weaken interest in doing an activity again (e.g., combined with making an exogenous inference or extrinsic experience to weaken eating snack foods). Future research is needed to test the effectiveness of different combinations of mechanisms for increasing or decreasing interest in different activities. We believe that, whatever the combination, regulatory fit should also be taken into account—fit matters.

References

Avnet, T., & Higgins, E. T. (2003). Locomotion, assessment, and regulatory fit: Value transfer from "how" to "what." *Journal of Experimental Social Psychology, 39,* 525–530.

Bem, D. J. (1965). An experimental analysis of self-persuasion. *Journal of Experimental Social Psychology, 1,* 199–218.

Bianco, A. T., Higgins, E. T., & Klem, A. (2003). How "fun/importance" fit impacts performance: Relating implicit theories to instructions. *Personality and Social Psychology Bulletin, 29,* 1091–1103.

Camacho, C. J., Higgins, E. T., & Luger, L. (2003). Moral value transfer from regulatory fit: "What feels right *is* right" and "what feels wrong *is* wrong." *Journal of Personality and Social Psychology, 84,* 498–510.

Cesario, J., Grant, H., & Higgins, E. T. (2004). Regulatory fit and persuasion: Transfer from "feeling right." *Journal of Personality and Social Psychology, 86,* 388–404.

Cesario, J., & Higgins, E. T. (2008). Making message recipients "feel right": How nonverbal cues can increase persuasion. *Psychological Science, 19,* 415–420.

Deci, E. L. (1971). Effects of externally mediated rewards on intrinsic motivation. *Journal of Personality and Social Psychology, 18,* 105–115.

Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior.* New York, NY: Plenum Press.

Festinger, L. (1957). *A theory of cognitive dissonance*. Evanston, IL: Row, Peterson.

Forster, J., Higgins, E. T., & Idson, C. L. (1998). Approach and avoidance strength as a function of regulatory focus: Revisiting the "goal looms larger" effect. *Journal of Personality and Social Psychology, 75,* 1115–1131.

Freitas, A. L., & Higgins, E. T. (2002). Enjoying goal-directed action: The role of regulatory fit. *Psychological Science, 13,* 1–6.

Higgins, E. T. (1997). Beyond pleasure and pain. *American Psychologist, 52,* 1280–1300.

Higgins, E. T. (2000). Making a good decision: Value from fit. *American Psychologist, 55,* 1217–1230.

Higgins, E. T. (2005). Value from regulatory fit. *Current Directions in Psychological Science, 14,* 208–213.

Higgins, E. T. (2006). Value from hedonic experience *and* engagement. *Psychological Review, 113,* 439–460.

Higgins, E. T., Idson, L. C., Freitas, A. L., Spiegel, S., & Molden, D. C. (2003). Transfer of value from fit. *Journal of Personality and Social Psychology, 84,* 1140–1153.

Higgins, E. T., Trope, Y., & Kwon, J. (1999). Augmentation and undermining from combining activities: The role of choice in activity engagement theory. *Journal of Experimental Social Psychology, 35,* 285–307.

Isen, A. M. (1987). Positive affect, cognitive processes, and social behavior. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 20, p. 203–253). New York, NY: Academic Press.

Kimble, G. A. (1961). *Hilgard and Marquis' conditioning and learning.* New York, NY: Appleton-Century-Crofts.

Kruglanski, A. W. (1975). The endogenous-exogeneous partition in attribution theory. *Psychological Review, 82,* 387–406.

Kruglanski, A. W., Alon, S., & Lewis, T. (1972). Retrospective misattribution and task enjoyment. *Journal of Experimental Social Psychology, 8,* 493–501.

Lepper, M. R. (1983). Social-control processes and the internalization of social values: An attributional perspective. In E. T. Higgins, D. N. Ruble, & W. W. Hartup (Eds.), *Social cognition and social development: A sociocultural perspective* (pp. 294–330). New York, NY: Cambridge University Press.

Lepper, M. R., Greene, D., & Nisbett, R. E. (1973). Undermining children's intrinsic interest with extrinsic reward: A test of the overjustification hypothesis. *Journal of Personality and Social Psychology, 28,* 129–137.

Liberman, N., Idson, L. C., Camacho, C. J., & Higgins, E. T. (1999). Promotion and prevention choices between stability and change. *Journal of Personality and Social Psychology, 77,* 1135–1145.

Pittman, T. S., Cooper, E. E., & Smith, T. W. (1977). Attribution of causality and the overjustification effect. *Personality and Social Psychology Bulletin, 3,* 280–283.

Schwarz, N. (1990). Feelings as information: Informational and motivational functions of affective states. In E. T. Higgins & R. M. Sorrentino (Eds.), *Handbook of motivation and cognition: Foundations of social behavior* (Vol. 2, pp. 527–561). New York, NY: Guilford Press.

Shah, J., Higgins, E. T., & Friedman, R. (1998). Performance incentives and means: How regulatory focus influences goal attainment. *Journal of Personality and Social Psychology, 74,* 285–293.

Skinner, B. F. (1938). *The behavior of organisms: An experimental analysis.* New York, NY: Appleton-Century-Crofts.

Skinner, B. F. (1953). *Science and human behavior.* New York, NY: Macmillan.

Thorndike, E. L. (1911). *Animal intelligence.* New York, NY: Macmillan.

Wicklund, R. A., & Brehm, J. W. (1976). *Perspectives on cognitive dissonance.* Hillsdale, NJ: Erlbaum.

Received September 26, 2008
Revision received December 9, 2009
Accepted December 10, 2009 ■