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IGNORANCE IS BLISS: UNPLEASANT TASKS SEEM WORSE IF THEY ARE EXPECTED TO HAPPEN AGAIN

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ABSTRACT

Everyone has to do things they don't enjoy, and often these unpleasant tasks happen more than once. This project examined how expecting to repeat an unpleasant task might change one's initial affective experience of completing the task. First, it may be better to know that one will have to repeat the task, for this way one can work on improving their affect. Thus, people who expect the second task might experience the first task as better than those who do not know about the second task. Second, it may actually be worse to know that one will have to repeat the task, because this knowledge might result in people dreading the second task while they are working on the first task. In two experiments, compared to people who did not know that they would have to repeat the task, people who expected to do the task twice felt more negative affect (but not more positive affect) during the initial task. This effect remained even when the participants were in a condition designed to increase their intrinsic motivation to perform well on the task. A third study examined people's desire to know about the fact that the task would be repeated and if they thought that this knowledge would help or hinder their affect during initial task. It revealed that respondents expressed a desire to know ahead of time that they would have to repeat the task and that they did not realize that knowing about the second task would result in more negative affect. Thus, if the goal is to improve initial task affect, in contrast to people's assumptions, ignorance is bliss.

TABLE OF CONTENTS

LIST OF FIGURES

Ignorance is Bliss: Unpleasant Tasks Seem Worse if they are Expected to Happen Again

At times, everyone has to do things they don't enjoy in order to get what they want, accomplish a goal, or fulfill a responsibility. For example, someone who is not interested in theatre might attend their child's class play to be a supportive parent, even though it is boring. Although they may not enjoy the experience, people find a way to stay motivated and get through it. But what happens when people expect to do something unpleasant twice? One might need to sit through the child's play twice, clean not one but two dirty rooms, or make not one but two trips to the dentist. Does knowing from the get-go that the task has to be done twice influence the way in which the first task is experienced?

This project examines how this knowledge may influence people's initial experience of the task. It will explore two possibilities. The first possibility is that knowledge may be power, in that knowing ahead of time that one has to repeat that task may provide people with opportunities to regulate their affect and improve the initial task experience. The second possibility is that ignorance may be bliss, in that knowing ahead of time that one has to repeat the task may compound people's dread and negativity and further worsen the initial task experience. In addition to examining whether this knowledge alters initial task affect, the project also examined people's own theories about this process, to determine whether people want to know about repeating the task and if they are aware of how this knowledge may alter their initial task experience.

Expecting to repeat a task may improve people's initial task affect

First, expecting an unpleasant situation to occur twice might be beneficial in that this knowledge could help people improve their affect during the initial task. People generally try to minimize negative affect and maximize positive affect (Riediger, Schmiedek, Wagner, &

Lindenberger, 2009). Expecting to have to do the task twice, instead of once, might provide an incentive to make the task seem better so the overall experience will be better. That is, because the first task was not too bad, one could expect that the second task also would not be too bad. One way people may improve the experience of an unpleasant task is by internalizing the task or creating a personal reason for doing the task (Deci & Ryan, 1985; Margolis & Molinsky, 2008). Internalizing involves changing the locus of control for self-regulation from external (e.g., because it's your job, because your mother told you to) toward internal (e.g., I think this is important to do, I want to do this), and results in more subjective task enjoyment (Deci et al., 1994; Deci & Ryan, 1987). In support of this hypothesis, people sometimes improve their affect when they have to do a single unpleasant task by trying to make the task seem more interesting or valuable so they can stay motivated to complete it (e.g. Sansone, Weir, Harpster, & Morgan, 1992; Wolters, 1998). In addition to improving task affect, internalizing a task can change the trajectory of affect across time. People feel increasing positive affect throughout internal tasks, but affect only improves for external tasks when the task is almost over and after it ends (Matsumoto & Sanders, 1988).

Internalization can be promoted by giving people a reason for doing a task that benefits them (e.g. there are cognitive benefits; Deci et al., 1994). Further, having a reason for doing the task promotes the use of strategies to increase interest in the task, such as varying the procedures used to complete the task, or thinking of the task as a challenge (Sansone et al., 1992). Indeed, people are more likely to choose to do more of a boring task when they are no longer required to if they have a meaningful reason for doing the task (Deci et al., 1994; Sansone et al., 1992). Thus, people who expect to do the task twice might be motivated to internalize more than people

who expect to do the task once, and this might be a way they could enhance their affect and motivation to get through the task.

One study that provides support for the idea that people find a way to feel better when they know they have to do something unpleasant more than once comes from Gibbs (1992). He told participants that they would drink something that tasted terrible either once or 20 times. After the first drink, participants rated the amount of pleasure or displeasure they felt from tasting the solution on a bipolar scale. The group that expected to have to drink the solution repeatedly rated it as less negative than the group that did not expect to have to drink it again. These findings support the idea that, if people think that an unpleasant task has to be done more than once, they might be more motivated to make the task seem less negative.

Expecting to repeat a task may worsen people's initial task affect

On the other hand, expecting the task to recur might result in people feeling more, not less, negative affect during the initial task. The knowledge that one has to repeat the task may create a sense of dread about the second task (Harris, 2012). This dread may result in the first task seeming more negative than it would be without knowing about the second task. For instance, the parent who has to attend two performances of a boring play may watch the first performance and have reoccurring thoughts about how they dread having to repeat the experience. These thoughts about having to see the play again may result in the first performance seeming more negative than it would have been if the second performance was unknown.

If dreading the experience makes the initial task seem worse, why would people employ this strategy, especially if people have the goal to minimize pain and maximize pleasure? One possibility is that when a potentially negative event is approaching (such as having to do the task a second time) people tend to lower their expectations or 'brace for the worst' (Shepperd,

Findley-Klein, Kwavnick, Walker, & Perez, 2000; Sweeny & Krizan, 2013). Bracing is when people make increasingly negative, or less optimistic, predictions about an event as it draws nearer (Shepperd, et al., 2000). They do so because people find surprising negative events to be worse than expected negative events (Feather, 1969; Mellers, Schwartz, Ho, & Ritov, 1997). By expecting the worst, people can avoid being unpleasantly surprised and may even be pleasantly surprised if the event is not as bad as they thought. Thus, bracing may protect people from the negativity of second task because they are already expecting the second task to be negative, thereby creating a more favorable comparison between expected and actual affect.

Consistent with bracing hypothesis, Galak and Meyvis (2011) found that people do indeed lower their expectations when they expect to repeat a task. They asked participants to perform an unpleasant task. Then, they told one group of participants *after* they did an unpleasant task that they would have to repeat it, but did not tell the other group that they would have to repeat it. Then, participants performed another task for a few minutes, and afterwards they rated how they felt during the unpleasant task. People who expected to repeat the task remembered it being worse than people who did not expect to repeat it, possibly so they could brace for the second task. They demonstrated that the effect did not occur when people did not have time between finding out about the second task and rating task affect, when the task was considered positive rather than negative, or when people reported they did not have a tendency to brace in other situations. These studies indicate that people who expect to repeat an unpleasant task may recall the initial experience in a more negative light than those who do not. However, none of the participants in this study knew *during* the task that they would have to do it again. The bracing occurred *after* the task was completed. The study cannot address whether knowing while doing the task alters that task experience, only that people adjust their recollections post

hoc. Thus, the question remains as to whether people would *experience, rather than recollect,* a task as being negative in order to perhaps brace for the worst that may to follow.

To examine whether participants brace, this work not only examined whether expecting to repeat the task lowered people's ratings of the initial task experience, but also whether these lower ratings helped to brace people against the negativity associated with repeating the task. Specifically, if bracing occurs, then people who brace should expect less of a change in their affect when the second task comes than people who could not brace.

Goals and Hypotheses

This research examines how expecting to repeat an unpleasant task changes the affect experienced during the initial task. In this project, respondents completed a boring task, as boredom is a very unpleasant affective state (Wilson et al., 2014). Study 1 examined whether knowing or not that one has to repeat a task (a) changes how people feeling during the initial task, either for the better or the worse and (b) how they predict they would feel while doing it a second time. Study 2 extends this work to examine whether intrinsic motivation moderates these effects. Study 3 examines people's preferences and the reasons for them. Specifically, do people want to know about having to repeat the task or not, and if so why?

Study 1

Study 1 examined whether knowing prior to an unpleasant task that it would have to be repeated influences people's experience of the initial task and, if so, does knowing make it seem better or worse? To answer this question, three groups of participants performed a boring task and then rated how much negative affect they felt during the task. One group was told prior to starting that they would be doing the task twice (the expected group). Another group was not told that they would repeat the task (the unexpected group). Because we were specifically interested

in how knowing *during* the task changes how bad it seems, a third group was told *after* the first task and *immediately before* rating task affect that they would repeat the task (the just found out group). This group was included to rule out the possibility that people who completed the task, but then found out that it would be repeated, might be able to quickly adjust their memory of the task prior to reporting it. So, if finding out about the second task *before* the initial task is important, the just found out group should perceive the task similarly to the unexpected group, and only the expected group should differ in task affect ratings.

Method

Participants. Two hundred and seventeen (111 women, 106 men, M_{age} = 18.77, *SD* = .93) introductory psychology students participated in the study for course credit. This final sample arose after dropping 15 people who did not complete at least 50% of one of the affect measures or who completely stopped answering questions before the experiment was over. An a-priori power analysis, assuming a d = .5, alpha = .05, and power = .80, indicated that the sample size should be greater than 159 participants.

Procedure. In all studies, we report all the measures that participants completed. Participants were run in groups of 11 or fewer individuals and provided the following information: age, sex, number of psychology experiments they had completed, and whether or not English was their first or primary language. All participants rated to what extent 20 emotions words described their feelings "right now, at this moment" using a scale ranging from 1 (*not at all*) to 7 (*extremely*). The emotion words they rated represented 4 facets of boredom (see: Fahlman, Mercer-Lynn, Flora, & Eastwood, 2011): disengagement (e.g. apathetic, indifferent), inattention (e.g. alert, absorbed), aversive/high arousal (e.g. agitated, annoyed), and aversive/low

arousal (e.g. lethargic, weary). These scores were combined to form a single measure of negative affect, with higher scores indicating more negative affect, Cronbach's alpha = .89.

Then participants were randomly assigned to one of three conditions. Participants in the expected condition read: "You are about to perform a task. You will do this task twice. You will complete the task, then answer some questions, and then you will do the task again." Participants in the unexpected condition and the just found out condition did not read this information (see Figure 1).

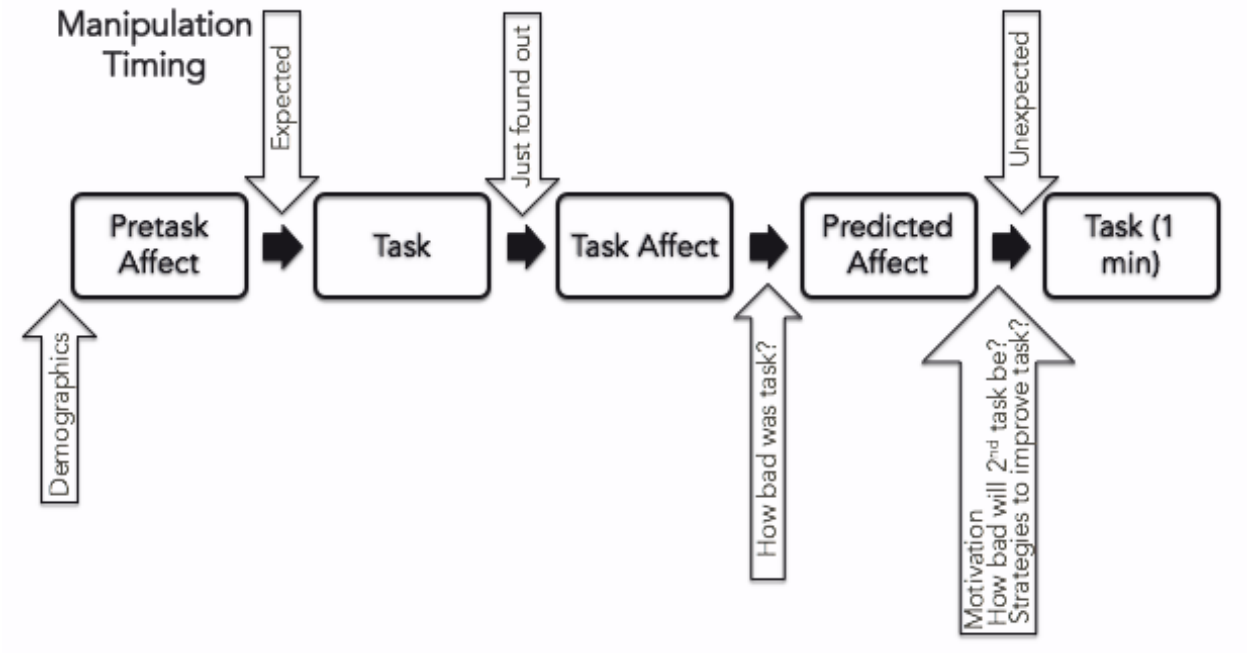

Figure 1. Study 1 procedure with arrows representing timing of manipulations (top) and measures (bottom).

All participants performed a boring task for eight minutes. The task, used by Mann & Cadman (2014), was to retype items from a phone book (names, addresses, and telephone numbers). The instructions emphasized the importance of both speed and accuracy. After the

task, participants in the just found out condition saw the following message: "You will be doing the task twice. You will answer some questions, and then you will do the task again," and other conditions did not receive this message.

To assess negative affect felt during the task, all participants completed the negative affect measure again, but with the prompt to rate how much they felt each of the 20 emotions during the typing task. They also rated "How bad was doing the task?" from 1 (*not bad at all*) to 7 (*very bad*). To see if knowledge about repeating the task altered how bad people predicted the second task would be, respondents rated how much they would feel each of the emotions if (in the unexpected condition) or when (in the expected and just found out condition) they did the task again, and rated how bad the task would be if/when they did it again from 1 (*not bad at all*) to 7 (*very bad*).

People's motivation to perform the task a second time also was assessed. In particular, we were interested in whether expectation conditions altered motivation and if worse task affect predicted less motivation to complete the second task (Sansone et al., 1992; Wolters, 1998). To examine these issues, participants completed a 6-item measure of motivation to do the task again (Cronbach's alpha = .87). They rated their agreement with statements such as "I am motivated to do the task again" and "I really don't want to do the typing task again" from 1 (*strongly disagree*) to 7 (*strongly agree*).

Respondents also completed some exploratory questions to find out about individual differences that might be related to the boredom people felt. They completed the 10-item short form of the Boredom Proneness Scale (BPS-SF; Cronbach's alpha = .76 Vodanovich, Wallace, & Kass, 2005) and the Revised Life Orientation test (LOT-R; Cronbach's alpha =.84, Scheier, Carver, & Bridges, 1994), which is a 12-item measure of dispositional optimism. Because these

items were exploratory, they will not be discussed. Finally, participants rated whether or not they had used any strategies to make the task more enjoyable, and those who said yes were asked to explain those strategies. Then participants completed the boring task again for one minute, and afterward they watched an amusing video to alleviate any remaining negative affect and were debriefed.

Results

Table 1 displays the means, standard deviations, and correlations amongst all the measures.

Boredom manipulation check. A repeated measures ANOVA comparing pretask negative affect to task negative affect (affect experienced during the task) confirmed that the task was considered negative and boring, with task negative affect (M = 3.68, SD = 1.04, 95% CI [3.55, 3.82]) being significantly greater than pretask negative affect (M = 3.30, SD = 0.83, 95% CI [3.19, 3.41]), $F(1, 216) = 33.69$, $p < .001$, $\eta_p^2 = .14$, $M_{dif} = 0.39$, 95% CI = [.25, .52].

Pretask negative affect. A one-way ANOVA that looked at the effect of expectation on pretask negative affect indicated that the three conditions significantly differed from each other, $F(2, 214) = 3.56$, $p = .030$, $\eta_p^2 = .032$. The expected group expressed more negative affect (M = 3.51, SD = 0.82, 95% CI [3.32, 3.70]) than the unexpected group (M = 3.19, SD = 0.86, 95% CI [3.00, 3.39], $p = .022$, $M_{dif} = 0.32$, 95% CI [.05, .59]) and the just found out group (M = 3.19, SD = 0.79, 95% CI [3.00, 3.38], $p = .021$, $M_{dif} = 0.32$, 95% CI [.05, .59]), which did not differ, p = 1.00, $M_{dif} < 0.001$, 95% CI [-.27, .27]. Because differences in pretask affect could be problematic when comparing groups on task and predicted affect, we used pretask affect as a covariate to account for these differences and to reduce error variance (Miller & Chapman, 2001). Pretask affect satisfied the assumptions required for a covariate, for the expected group had no idea that

they were going to repeat the task, suggesting that this difference was a random occurrence (the treatment cannot influence the covariate if the covariate occurs first; Miller & Chapman, 2001). The assumption of homogeneity of regression slopes also was met (Pretask Affect*Expectation Condition, $p > .2$).

Task negative affect. An ANCOVA in which expectation condition predicted participants' task negative affect (coded so that higher scores represented more negative affect) using pretask affect as a covariate was conducted. The effect for the covariate, pretask affect, was significant, $F(1, 213) = 54.59$, $p < .001$, $\eta_p^2 = .204$. The analysis revealed a significant main effect for expectation condition, $F(2, 213) = 3.20$, $p = .043$, $\eta_p^2 = .029$.[1] As seen in Table 2, participants in the expected group experienced significantly more negative affect during the task ($M_{adj} = 3.90$) than the unexpected group ($M_{adj} = 3.53$, $p = .015$, $M_{dif} = 0.38$, 95% CI [.07, .68]) and marginally more than the just found out group ($M_{adj} = 3.63$, $p = .07$, $M_{dif} = .27$, 95% CI [-.03, .58]). Task affect did not differ significantly between the just found out and unexpected groups, $p = .5$, $M_{dif} = -0.10$, 95% CI [-.40, .20]. In other words, the expected group experienced more negative affect during the initial task than the other two groups.

In an ANOVA comparing the three conditions on the single item asking how bad the task was, the main effect trended toward significance ($F(2, 214) = 2.39$, $p = .094$, $\eta_p^2 = .02$; see Table 3). Planned analyses revealed that the expected group ($M = 4.49$, $SD = 1.45$, 95% CI [4.11, 4.86]) reported significantly more negative affect than the unexpected group ($M = 3.93$, $SD = 1.72$, , 95% CI [3.56, 4.31], $p = .04$, $M_{dif} = 0.56$, 95% CI [0.03,1.09]), and the just found out group was not significantly different from either of them, $M = 4.04$, $SD = 1.65$, 95% CI [3.67, 4.41], just found out vs. expected, $M_{dif} = 0.45$, $p = .10$, 95% CI [-0.97, 0.08], just found out vs. unexpected $M_{dif} = 0.11$, $p = .68$, 95% CI [-0.42, 0.64].

[1] This effect was significant regardless of whether or not the covariate was used.

Predicted change in negative affect from the first to the second task. To examine whether the expected group may have engaged in bracing, in that by feeling worse during the first task the expected group would anticipate little increase in their affect when imaging completing the task again (predicted affect), a repeated measures ANCOVA was conducted. After verifying that pretask affect met the assumptions necessary for use as a covariate (Pretask affect X Condition $p = .66$), a repeated measures ANCOVA was run with task affect and predicted affect as the repeated measures, expectation condition as the between-subjects factor, and pretask affect as a covariate. Consistent with the bracing explanation, the expected group predicted a smaller change in affect (M_{adj} task vs. predicted = 0.30, $SE = 0.07$, 95% CI [0.17, 0.43]) than the unexpected group (M_{adj} task vs. predicted = 0.58, $SE = 0.07$, 95% CI [0.45, 0.72], expected vs. unexpected $M_{dif} = 0.28$, $p = .003$, 95% CI [0.09, 0.47]), as evidenced by a Task/Predicted Negative Affect X Condition interaction, $F(2, 213) = 5.72$, $p = .004$, $\eta^2 = .05$; see Table 2 for adjusted means.[2] The expected group predicted the same amount of affective change as the just found out group (M_{adj} task vs. predicted = 0.31, $SE = 0.07$, 95% CI [0.18,0.44], expected vs. just found out $M_{dif} = 0.01$, $p = .91$, 95% CI [-0.18, 0.19]), and the unexpected group predicted a greater increase in negative affect than the just found out group, unexpected vs. just found out $M_{dif} = 0.27$, $p = .004$, 95% CI [0.09, 0.46]. It is important to note that expectation condition did not alter predicted affect, $F(2, 213) = 1.25$, $p = .29$, $\eta_p^2 = .012$; see Table 2 for adjusted means. Thus, the effect was not due to people differing in how bad they anticipated it would be to complete the second task.

The same effects, however, were not replicated when the dependent variable was the single item asking how bad the task will be. A repeated measures ANOVA with the single item asking how bad the task was/will be as the dependent variable indicated that the expected (M_{adj}

[2] This effect was significant regardless of whether or not the covariate was used.

task vs. predicted = 0.74, *SE* = 0.13, 95% CI [0.49, 0.99]), unexpected (M_{adj} task vs. predicted = 0.99, *SE* = 0.13, 95% CI [0.75, 1.24]), and just found out (M_{adj} task vs. predicted = 0.80, *SE* = 0.13, 95% CI [0.56, 1.05]) groups did not differ significantly in the amount of affective change they thought would happen between the first and second tasks, $F(2, 214) = 1.01$, $p = .37$, $\eta_p^2 = .009$.

Motivation. Expectation condition did not change how motivated people were to do the second task, $M_{expected} = 2.61$, $SD = 1.18$, 95% CI [2.30, 2.92], $M_{unexpected} = 2.78$, $SD = 1.50$, 95% CI [2.47, 3.09], $M_{just\ found\ out} = 2.92$, $SD = 1.31$, 95% CI [2.61, 3.22], $F(2, 214) = 0.96$, $p = .38$, $\eta_p^2 = .01$. Simple regressions were used to test whether more negative task and predicted affect were associated with less motivation to complete the second task. As expected, more negative affect during the first task significantly predicted decreased motivation to complete the second task ($r = -.57$, $p < .001$), and more predicted negative affect during the second task was associated with lower motivation ($r = -.67$, $p < .001$). Thus, the more negative affect one experiences during the initial task and the more negative affect they anticipate feeling when they do it again, the less motivated they are to do the second task. Overall, motivation was low ($M = 2.77$, $SD = 1.34$, where 1 reflected low motivation and 7 reflected high motivation).

Discussion

The data indicate that expectations about whether a task will be repeated do indeed alter people's initial task experience. Knowing ahead of time that the task will be repeated worsened, rather than improved, people's initial task experience. This result may be due to people bracing, in that even though the expected group experienced the first task as worse than the other groups, this affect seemed to brace them against a predicted increase in negative affect at the prospect of having to repeat the task. The 20-item negative affect measure reflected a stronger effect of

expectation compared to the less reliable single-item measure. It is also important to note that this change in task affect did not happen when people did the task and then were informed that they would have to perform it again (the just found out condition). Thus, finding out about the second task right before performing it does not produce this expectation effect

The data did not support the hypothesis that people who expect a task to recur would be motivated to improve it. First, the expectation of having to repeat the task did not improve task affect. Moreover, as people's experiences and predictions of negative affect increased, these reports were associated with less, not more, motivation to perform the second task. People may not have been motivated to improve their affect because they lacked a strong and compelling intrinsic reason to do so. According to Sansone et al., (1992) people must have both a motivation and an opportunity to make boring tasks seem more interesting. In this study, there was no apparent motivation to do the task other than external ones such as getting course credit or because the experimenter told them to do it. Indeed, people reported rather the low levels of motivation to perform the task. Perhaps people need some reason for doing the task that they can relate to personally in order to encourage them to engage in the processes needed to try to make the task seem better? Study 2 examined this issue, by investigating whether providing people with a stronger motivation to perform the task would enable people to make the task seem better when they expected to have to do it twice.

In addition, Study 1 only examined perceptions of negative affect, specifically, boredom. It is unclear whether knowing that one had to perform the task again not only increased boredom, but also decreased positive feelings. To assess this, Study 2 included not only a boredom measure, but also a measure of positive affect.

Study 2

In addition to replicating the expectation effect from Study 1, Study 2 examined whether having a stronger motivation to perform the task would motivate people who expect a task to recur to try to improve their task affect. Study 2 was a 2 (expected/unexpected) X 2 (motivation/no motivation) factorial experiment. To manipulate expectations, half of participants learned prior to the initial task that they would do it twice, and half were not. To manipulate motivation, half of participants read a brief paragraph giving a reason for doing the task and half did not.

It was predicted that the expected, no motivation condition would replicate the results of Study 1, such that people in the expected condition report worse task affect than those in the unexpected condition. If being more motivated to do the task increases the likelihood of trying to make the task more enjoyable, then respondents in the motivation condition should report less negative affect in the expected than unexpected condition. That is, knowing that one has to repeat a negative, but valuable task, may result in people being more likely to improve their task affect than those who lack a motivation.

Method

Participants. Participants were 303 undergraduate students (M_{age} = 19.22, *SD* = 1.91) who received course credit. This sample size was determined using G*Power, which indicated that a sample size of at least 274 participants was needed to have an 80% chance of detecting a between-subjects effect the same size as the effect of condition found in Study 1 (*f* = .17). The sample was 53.8% female (*n* = 163) and 46.2% male (*n* = 140), with 67.3% (*n* = 204) self-identifying as Caucasian, 19.1% (*n* = 58) Asian/Pacific Islander, 4.6% (*n* = 14) African American, 4.3% (*n* = 13) Latino/a, and 4.6% (*n* = 14) other.

Procedure. The procedure was very similar to Study 1; participants provided demographic information, rated the negative affect they felt at that moment (pretask affect), and were told they would do a task. We added a five item measure of positive affect that was administered along with the negative affect measure of pretask, task, and predicted affect; participants rated how happy, enthusiastic, inspired, excited, and cheerful they felt (Cronbach's alpha = .89). To manipulate expectation condition, participants were randomly assigned to learn that they would repeat the task or were not told anything about repeating the task (see Figure 2).

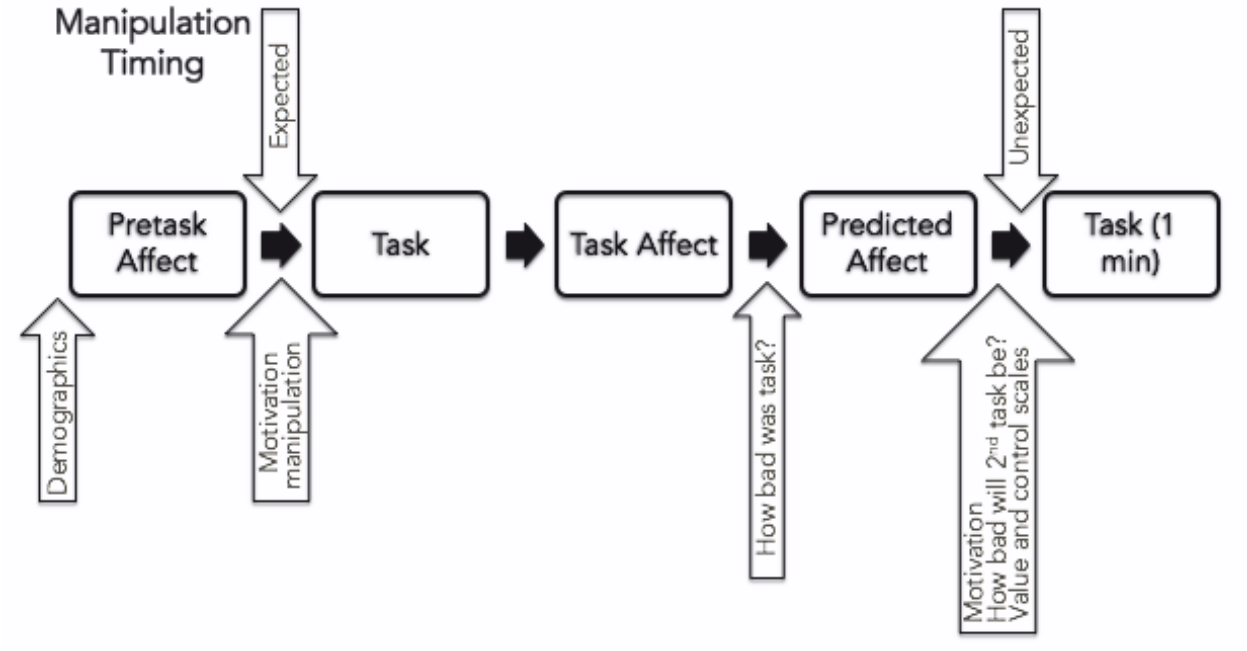

Figure 2. Study 2 procedure with arrows representing timing of manipulations and measures.

To manipulate motivation, participants were randomly assigned to either read the following paragraph designed to increase motivation or not:

> Research suggests that completing tasks like this can improve focus and concentration. Practicing skills of focus and concentration (as you are about to do) can improve your ability to focus on other types of activities in the future. You may notice that you are better able to control your attention after completing this activity.

This motivation manipulation stemmed from research by Deci et al. (1994) which indicates that motivation can be fostered by increasing perceived value/usefulness, which increases task internalization (Deci et al., 1994). Pilot testing revealed that this manipulation increased the extent to which people viewed the task as valuable (M = 4.01, SD = 1.40, 95% CI [3.78, 4.23]) relative to no motivation instructions (M = 3.28, SD = 1.38, 95% CI [3.05, 3.51], p < .001, η_p^2 = .064, M_{dif} = 0.73, 95% CI [0.40, 1.05]).

Participants performed the typing task from Study 1. Task instructions were more specific during Study 2 than they were in Study 1. They read:

> Task Instructions - READ CAREFULLY: Next to your computer is a sheet of paper with text printed on it. Your task is to type this text into the box on the next screen. Please be as accurate as possible while typing as quickly as possible. Make sure to go in order from left to right, top to bottom without skipping anything. Pay attention to capitalization and punctuation, because they count toward your accuracy. The survey will advance automatically once the task is over. Please continue working until time is up.

The motivation group also read, "Remember that doing this task may help improve your focus and concentration." Then all participants completed the measures of task affect. They read

"Please rate to what extent you felt the following emotions during the typing task". Then they completed measures of predicted affect. The instructions read: "If you had to (when you) do the task again, to what extent do you think you would (will) feel the following emotions while you did the task a second time?" Participants also rated how bad the first task was and how bad doing the task again would be on a scale from 1 (*not bad at all*) to 7 (*very bad*).

Additionally, as an internal motivation manipulation check, participants answered three items from the value/usefulness subscale of the Intrinsic Motivation Inventory (IMI; Deci et al., 1994). This subscale measures the degree to which participants believe that a task is of personal value to them. The items were adjusted to refer to the typing task (e.g., "I think the typing task is an important activity"; Cronbach's alpha = .85). Participants also answered three items from the control subscale from this measure to ascertain whether in addition to value, the manipulation also encouraged a sense of control (e.g., "I believe I had some choice about doing this typing task," Cronbach's alpha = .54). Participants responded on a scale from 1 (*not at all true*) to 7 (*very true*; see appendix for full measures). Finally, after doing the task again for one minute, participants were debriefed.

Results

Table 4 displays the means, standard deviations, and correlations amongst all the measures.

Motivation manipulation check. The motivation manipulation was successful. People in the motivation condition thought the task was of more personal value and usefulness (M = 3.34, SD = 1.50) than the no motivation condition (M = 2.82, SD = 1.41, 95% CI [2.58, 3.05], p = .002, η_p^2 = .032, 95% CI [-.86, -.20]). The motivation manipulation did not change perceived control, $M_{motivation}$ = 3.37, SD = 1.35, 95% CI [3.15, 3.59]; $M_{no\ motivation}$ = 3.31, SD = 1.44, 95%

CI [3.09, 3.54]; $F(1, 301) = .127$, $p = .7$, $\eta_p^2 < .001$, indicating that the instructions altered the perceived value of, but not control over, the task. It should be noted that reliability for the control scale was low (alpha = .54), so difference may exist if a more reliable measure of control was employed.

Boredom manipulation check. To examine whether the task was successful at inducing boredom, a repeated measures ANOVA, with pretask negative affect and task negative as within-participants factors was conducted. As in Study 1, the typing task increased boredom, for task negative affect ($M = 3.69$, $SD = 1.02$, 95% CI [3.55, 3.82]) was significantly greater than pretask negative affect, $M = 3.03$, $SD = 0.77$, 95% CI [2.95, 3.12], $F(1, 302) = 148.79$, $p < .001$, $\eta_p^2 = .330$, $M_{dif} = 0.66$, 95% CI = [.55, .76].

Task negative affect. A 2 (Expectation) x 2 (Motivation) univariate ANCOVA was used to assess whether the expectation and motivation manipulations altered task negative affect. Pretask affect was included as a covariate to reduce variance due to error (Miller & Chapman, 2001).[3] As expected, the covariate, pretask affect, was positively associated with task negative affect, $F(1, 298) = 101.91$, $p < .001$, $\eta_p^2 = .26$. In addition, replicating Study 1, the expected group ($M_{adj} = 3.80$) rated the task as worse than the unexpected group ($M_{adj} = 3.58$), $F(1, 298) = 5.03$, $p = .026$, $\eta_p^2 = .017$, $M_{dif} = .225$, 95% CI = [.03, .42], (see table 5 for *SE*s and CIs). Moreover, the motivation manipulation was effective at making the task seem less negative, motivation $M_{adj} = 3.48$, no motivation $M_{adj} = 3.90$, $F(1, 298) = 17.82$, $p < .001$, $\eta_p^2 = .056$, $M_{dif} =$

[3] It should be noted that, consistent with the assumption that groups shouldn't differ in pretask affect, in this study, pretask affect did not differ significantly by expectation or motivation condition, $M_{expected} = 3.00$, $SD = 0.76$, 95% CI [2.88, 3.12], $M_{unexpected} = 3.06$, $SD = .78$, 95% CI [2.94, 3.19]; $M_{motivation} = 3.07$, $SD = 0.73$, 95% CI [2.95, 3.19], $M_{no\ motivation} = 3.00$, $SD = 0.80$, 95% CI [2.87, 3.12]; all *p*s > .4. All assumptions for using pretask affect as a covariate were met, including homogeneity of regression slopes (Pretask Affect*Expectation Condition *Motivation $p > .8$).

= -.42, 95% CI = [-.62, -.23]). Although having a motivation for the task did make it seem better, this effect did not vary by expectation condition, $F(1, 298) = .03$, $p = .862$, $\eta_p^2 < .001$.[4]

The one-item rating of how bad the task was did not differ in an ANOVA comparing people who expected versus did not expect the second task, expected $M = 4.00$, $SE = .14$, 95% CI [3.73, 4.27], unexpected $M = 3.85$, $SE = .14$, 95% CI [3.58, 4.12], $F(1, 299) = .60$, $p = .44$, $\eta_p^2 = .002$, $M_{dif} = .215$, 95% CI [-.23, .53].[5] Responses on this item differed by motivation condition, with people who had a motivation expecting the task not to be as bad ($M = 3.73$, $SE = .14$, 95% CI [3.46, 4.00]) as people with no motivation, $M = 4.11$, $SE = .14$, 95% CI [3.84, 4.38], $F(1, 299) = 3.93$, $p = .048$, $\eta_p^2 = .013$, $M_{dif} = .38$, 95% CI = [.00, .77]. There was no interaction between motivation and expectation conditions, $F(1, 299) = .47$, $p = .49$, $\eta_p^2 = .002$. These findings do not support the hypothesis that having a motivation would encourage people in the expected condition to try to make the task better than the unexpected condition.

Expecting the second task had no effect on positive affect, expected $M_{adj} = 2.24$, $SE = .08$, 95% CI [2.09, 2.40], unexpected $M_{adj} = 2.33$, $SE = .08$, 95% CI [2.18, 2.49], $F(1, 298) = 0.61$, $p = .43$, $\eta_p^2 = .002$, $M_{dif} = .09$, 95% CI = [-.13, -.31]). The motivation condition, $M_{adj} = 2.48$, $SE = .08$, 95% CI [2.32, 2.63], felt more positive affect than the no motivation condition, $M_{adj} = 2.10$, $SE = .08$, 95% CI [1.94, 2.26], $F(1, 298) = 11.30$, $p < .001$, $\eta_p^2 = .037$, $M_{dif} = .38$, 95% CI = [.16, .60]). As before, motivation did not interact with expectations, $F(1, 298) = 1.20$, $p = .28$, $\eta_p^2 = .004$. Thus, expectations alter negative, but not positive, affect.

Predicted change in negative affect from the first to the second task. We also examined the bracing hypothesis by looking at whether expectation or motivation conditions influenced the degree to which people predicted the second task would be worse than the first

[4] Results were the same when the covariate was not used.
[5] Controlling for pretask affect did not affect the results.

task. After verifying that assumptions were met for using pretask affect as a covariate (Pretask affect X Condition $p = .33$), a repeated measures ANCOVA covarying out pretask affect was run. Across all groups, people tended to think the second task would be worse than the first (task affect $M_{adj} = 3.69$, $SE = .05$, 95% CI [3.59, 3.79], predicted affect $M_{adj} = 4.13$, $SE = .06$, 95% CI [4.01, 4.25], $F(1, 298) = 10.62$, $p = .001$, $\eta_p^2 = .03$, $M_{dif} = .44$, 95% CI [0.37, 0.51]. Consistent with bracing, people expecting to repeat the task increased in negative affect less than people who had just learned they were about to do the second task, $F(1, 298) = 7.37$, $p = .007$, $\eta_p^2 = .024$, $M_{dif} = 0.20$, 95% CI [0.06, 0.35]; see Tables 5 and 6 for adjusted means)[6]. There was no difference between motivation conditions, $F(1, 298) = 1.09$, $p = .30$, $\eta_p^2 = .004$, $M_{dif} = 0.08$, 95% CI [-.07, 0.22] and the effect of condition did not depend on whether one had been given motivation to do the task, interaction $F(1, 298) = 0.04$, $p = .84$, $\eta_p^2 < .001$.

These effects of expectation are not due to differences in predicted task affect. An ANCOVA with expectations and motivation was conducted on predicted negative affect. All assumptions for using starting affect as a covariate were met. The effect for the covariate, pretask affect, was significant, $F(1, 298) = 64.26$, $p < .001$, $\eta_p^2 = .18$. As in Study 1, expectations did not alter predicted affect, $F(1, 298) = 0.04$, $p = .84$, $\eta_p^2 < .001$, $M_{dif} = .024$, 95% CI [-.22, .23] (see Table 6 for means). People in the motivation condition anticipated experiencing less negative affect than those who lacked such a motivation, $F(1, 298) = 16.56$, $p < .001$, $\eta_p^2 = .053$, $M_{dif} = .50$, 95% CI [.26, .74], but this effect did not vary by expectation condition, interaction $F(1,298) = .07$, $p = .794$, $\eta_p^2 < .001$ (see Table 6 for means)[7].

A repeated measures ANOVA was run with the one-item measure of how bad the task was/would be as the within-participant factor. Regardless of condition, everyone tended to think

[6] This effect was significant regardless of whether or not the covariate was used.
[7] Results were the same when the covariate was not used.

the second task would be worse than the first (task affect M_{adj} = 3.92, *SE* = .09, 95% CI [3.74, 4.10], predicted affect M_{adj} = 4.86, *SE* = .10, 95% CI [4.67, 5.05], $F(1, 298) = 12.55$, $p < .001$, $\eta_p^2 = .04$, M_{dif} = .94, 95% CI [0.80, 1.08]. People expecting to repeat the task increased in negative affect less than people who had just learned they were about to do the second task, $F(1, 299) = 5.64$, $p = .02$, $\eta_p^2 = .02$, M_{dif} = 0.34, 95% CI [0.06, 0.62]; see Tables 7 and 8 for adjusted means)[8], and there was no difference between motivation conditions, $F(1, 299) = 2.43$, $p = .12$, $\eta_p^2 = .01$, M_{dif} = 0.22, 95% CI [-.06, 0.50]. The expectation effect did, however, depend on whether one had a motivation or not, interaction $F(1, 299) = 5.42$, $p = .02$, $\eta_p^2 = .02$, with the expected group predicting about the same amount of change in affect as the unexpected group when there was no motivation, ($M_{expected}$ = 0.82, *SE* = 0.15, 95% CI [0.54, 1.11], $M_{unexpected}$ = 0.83, *SE* = 0.14, 95% CI [0.55, 1.11]), but less change than the unexpected group when a motivation was provided, $M_{expected}$ = 0.71, *SE* = 0.14, 95% CI [0.44, 0.99], $M_{unexpected}$ = 1.39, *SE* = 0.14, 95% CI [1.10, 1.67]. That is, when a motivation was present, the expected condition was actually more likely to effectively brace than to try to improve their affect. Analyses on predicted affect reveal that the one-item measure of how bad the task would be was not influenced by expectation condition, $F(1, 299) = .91$, $p = .34$, $\eta_p^2 = .003$, or motivation condition, $F(1, 299) = .67$, $p = .42$, $\eta_p^2 = .002$, and there was no effect of the Expectation X Motivation interaction, $F(1, 299) = 1.02$, $p = .31$, $\eta_p^2 = .003$.

Discussion

Study 2 replicated the finding that if people know that they have to do a boring task twice, they feel more negative affect during the task compared to people who do not expect to repeat it. Furthermore, an internal motivation for doing the task lessened people's negative affect, regardless of their expectations about repeating the task. However, the motivation did not

[8] This effect was significant regardless of whether or not the covariate was used.

interact with the expectation condition to enhance people's task affect. If anything, the pattern of interaction means suggest that the motivation manipulation only increased bracing. Thus, the motivation seems to lessen negative task affect, but it did not interact with expectations to foster improved affect.

Studies 1 and 2 indicate that expecting to repeat a boring task increases, rather than decreases, negative affect while completing a task for the first time. A key question is whether people are indeed aware of this effect. In general, people are often not very accurate at reporting mental processes (Nisbett & Wilson, 1977) and predicting how things will make them feel (Wilson & Gilbert, 2003). Thus, do people want to know ahead of time that they will have to perform the negative task twice? And are they aware that it may make the initial task experience worse? The goal of Study 3 was to examine people's beliefs about this process to determine the degree to which they map onto the empirical evidence found in Studies 1 and 2.

Study 3

Study 3 examined people's preferences concerning whether or not they would want to know about having to repeat the boring task and their beliefs about how this knowledge may alter their experience performing the task. First, the study examined whether knowing ahead of time or not that a task will be repeated altered people's forecasted task affect. Respondents were randomly assigned to imagine that they had to do a boring task either once (unexpected condition) or twice (expected condition). Then, they rated how they would feel the first time they did the boring task. Second, the study examined whether these two conditions differed in terms of how they anticipated feeling if they knew versus did not know about the second task. This condition allows one to examine whether initial expectations alters people's anticipated response

to the task. Third, respondents answered whether they would want to know that they would have to repeat the task and explored some possible reasons for their preferences.

Method

Participants. Participants were recruited on Amazon's Mechanical Turk and received monetary compensation for their time. A power analysis using the effect size from Study 1 (f = .17) showed that a sample size of at least 274 would be required for an 80% chance of detecting the between-participants effect. Initially, 321 people took the survey; however, 15 failed our attention check (see procedure section for details) and were therefore removed from analyses. The final sample (N = 306, M_{age} = 34.8, SD = 12.32) was 54.2% female (n = 166) and 45.8% male (n = 140), 75.8% (n = 232) Caucasian, 8.5% (n = 26) African American, 7.5% (n = 23) Latino/a, 6.5% (n = 20) Asian/Pacific Islander, and 1.6% (n = 5) other.

Procedure. Via an on-line questionnaire, participants imagined how they would feel completing a boring task, which was to retype names, addresses, and telephone numbers from a phonebook (see Mann & Cadman, 2014). Respondents were randomly assigned to either the unexpected or expected condition. In the unexpected condition, they read:

> Imagine that you are applying for a job. As part of the application process, you have to transcribe names, addresses, and phone numbers from a sheet of paper into a text file. You will have to do this for 8 minutes. Think about how you would feel during those 8 minutes.

In the expected condition, they read:

> Imagine that you are applying for a job. As part of the application process, you have to transcribe names, addresses, and phone numbers from a sheet of paper into a text file. You will have to do this for 8 minutes. Then, after you have finished, you will do the same thing again for another 8 minutes. Think about how you would feel during the FIRST 8 minutes of the task.

To obtain a measure of task affect, both groups rated how they would feel on three 9-point scales. Response options were: 1 (*extremely negative*) to 9 (*extremely positive*), 1 (*extremely bored*) to 9 (*extremely interested*), and 1 (*extremely miserable*) to 9 (*extremely happy*). These scales were highly correlated (rs $\geq .76$, all ps $< .001$) and reversed and combined to form a measure such that higher numbers indicate greater task boredom, $\alpha = .92$.

Next, all participants imagined the same scenario that the expected group had imagined, and were instructed to "think about whether knowing you have to do the task a second time would change how you felt while doing the task the FIRST time (versus if you did not think you would do the task again). How would knowing about having to do the task a second time make you feel during the FIRST task?" They rated from: 1 (*much more negative*) to 9 (*much more positive*), 1 (*much more bored*) to 9 (*much more interested*), and 1 (*much worse*) to 9 (*much better*). These three items were highly correlated (rs $\geq .78$, all ps $< .001$); therefore they were combined to create one score reflecting participants' beliefs about expecting a second task, $\alpha = .93$. Then, participants had the option to explain why they would feel that way.

Participants then imagined the 'twice' scenario and were asked, "Would you rather find out before doing the task the first time that you will have to do it again or would you rather not know until after you have completed the task the first time?" Response options were *"I would*

want to know before doing the task for the first time," "No preference," and *"I would rather not know until after I did the task for the first time."*

The last part of the questionnaire was exploratory in order to better understand some of the reasons people would and would not want to know ahead of time about the second task. Respondents who indicated that they would want to know about the second task answered the following: "Why would you want to know about repeating the task prior to doing it the first time? Please rate how much each statement applies to you." They rated how much the following statements applied to them on a scale from 1 (*not at all*) to 5 (*very much*):

Otherwise, I would feel like I had been lied to or betrayed.

So I could mentally prepare for doing it again.

So I could try to make it more enjoyable, since I have to do it for a longer time.

These statements were intended to reflect ways people believe knowing about the second task might influence affect during the first task. The first statement reflects the idea that knowing might allow people to avoid feeling that they had been tricked when they find out later that they have to do the task again. The second statement taps into the belief that knowing ahead of time allows for mental processes that help one get ready for the second task. The third statement refers to the idea that knowing increases people's motivation to try to improve the first task in order to improve the second task.

People who chose "*no preference*" were asked: "Why would you have no preference?"

People who indicated that they would not want to know were asked, "Why would you NOT want to know about repeating the task prior to doing it the first time? Please rate how much

each statement applies to you." They rated these statements on the same scale ranging from not at all (1) to very much (5):

I only want to think about one task at a time.

It would make me happier to believe that the task was going to be over soon.

So I could look forward to doing something different.

These choices describe some ways people might think not knowing would benefit affect or motivation; they are all consistent with the hypothesis that knowing makes the first task seem worse. The first choice would indicate that people think it is beneficial to avoid either the anticipatory negative affect (dread) or the additional cognitive load associated with thinking about the second task during the first task. The second option refers to the idea that not knowing would allow one to feel better by looking forward to the task being over or by avoiding dread of the second task. The third option represents the possibility that looking forward to the task ending or beginning something new might generate positive affect and/or motivation to get through the initial task.

Finally, participants filled out a demographic questionnaire, which included an attention check. For this attention check they were instructed to select option C. They read a debriefing, which also thanked them for their participation.

Results

To be consistent with Studies 1 and 2, the dependent variables were coded so that higher values indicated more negative affect. First, to examine whether expectations influenced people's forecasted affect, a t-test was conducted. Interestingly, and in contrast to the findings in

Studies 1 and 2, people who expected that they would perform the task twice ($M = 4.12$, $SD = 1.90$) showed a nonsignificant trend toward imagining *less* negative affect than those who expected to perform it once, $M = 4.47$, $SD = 1.57$, $t(304) = 1.71$, $p = .088$, $M_{dif} = 0.34$, 95% CI [-.05, .74]).

The next analysis examined whether expectation condition influenced how respondents believed that knowing about the second task would affect the first task. Higher numbers indicated worse anticipated affect. Respondents in the expected group, $M = 5.35$, $SD = 1.68$, imagined that that this knowledge would once again result in less worsening of affect than those in the unexpected group, $M = 5.79$, $SD = 1.49$, $F(1, 304) = 5.95$, $p = .015$, $M_{dif} = .44$, 95% CI [.09, .80]).

Lastly, when asked whether they wanted to know about having to do the task twice prior to starting the first task, the data indicated that significantly more people would want to know ($n = 179$, 58.5%) than had no preference ($n = 65$, 21.2%) or would not want to know ($n = 62$, 20.3%, $\chi^2(2) = 87.24$, $p < .001$). An exploratory follow-up analysis, which looked at the correlations between anticipated affect and wanting to know, revealed that if people thought knowing would make them feel bad, the less likely they were to want to know, $r(304) = .15$, $p = .009$. Therefore, people's decisions about wanting to know or not were consistent with their beliefs about how it would make them feel, but their beliefs were often incorrect.

For exploratory purposes, we looked at respondents' reasons for wanting to know. A within-participants ANOVA with reason for wanting to know as the within-participants variable was conducted within the group of participants who said they wanted to know and those who said they did not want to know (no analyses were conducted for the no preference group, because they did not rate any statements about why they might have selected this option). For the

participants who said they would want to know about the second task, there was a significant multivariate difference in people's endorsement of the three reasons, $F(2,177) = 121.39$, $p < .001$, $\eta_p^2 = .579$. Overall, people endorsed mentally preparing to do the task again ($M = 4.36$, $SD = .910$, 95% CI [4.23, 4.50]) more than trying to enjoy the task ($M = 3.22$, $SD = 1.33$, 95% CI [3.02, 3.42], $p < .001$, $M_{dif} = 1.15$, 95% CI[.95, 1.35]) and feeling betrayed ($M = 2.75$, $SD = 1.41$, $p < .001$, $M_{dif} = 1.61$, 95% CI[1.36, 1.86]). Trying to enjoy the task was endorsed more than feeling betrayed, $p < .01$, $M_{dif} = 0.46$, 95% CI[.17,.76].

Of participants who said they would not want to know, there was a significant difference in endorsement of the three reasons for why they might not want to know, $F(2, 60) = 10.32$, $p < .001$, $\eta_p^2 = .256$. People who said they would not want to know endorsed feeling happier because the task was almost over ($M = 4.26$, $SD = .94$, 95% CI [4.02, 4.50]) more than only wanting to think about one task at a time ($M = 3.61$, $SD = 1.09$, 95% CI [3.34, 3.89], $p < .001$, $M_{dif} = 0.65$, 95% CI[.30, .99]) and looking forward to doing something different ($M = 3.65$, $SD = 1.22$, 95% CI [3.34, 3.95], $p < .001$, $M_{dif} = 0.61$, 95% CI[.27, .96]), which did not differ from each other, $p = .9$, $M_{dif} = 0.03$, 95% CI [-.44, .38].

Discussion

Study 3 indicates that people hold incorrect theories about the effects of knowing or not that a task will be repeated on task affect. Rather than stating that knowing ahead of time would make the task seem worse, respondents who imagined knowing ahead of time that they would repeat a boring task, if anything, thought knowing would make them feel better. Additionally, the expected group thought expecting to repeat the task would have less of an impact on the first task than the unexpected group. These findings suggest that people hold inaccurate beliefs about how expecting to repeat a task will make them feel - They think it will make the first task seem better,

though in reality, it makes the task seem worse. This incorrect prediction corresponds with a preference to know about the second task despite the fact that it will, in reality, cause more negative affect.

The exploratory data indicated that when it comes to wanting to know about the second task, people most strongly endorsed the idea that they wanted to mentally prepare to do the task again. Albeit not explicitly mentioned, an aspect of this mental preparation may be to brace themselves for having to repeat it. When it came to not wanting to know about the second task, participants' most endorsed response was to allow them to feel happier by believing that the task was almost over. Thus, people who expect to perform the task once may be able to find happiness in the fact that the task is completed.

Whether or not bracing occurs, people see some benefit to knowing about the second task as soon as possible and would prefer it despite its affective costs. Our finding that most people preferred to know ahead of time is consistent with work by Harris (2012) who found that 50.6% of people would choose to know immediately about a painful series of shots that would occur in one month, 33.2% opted to find out immediately before the shots took place, and the rest chose to find out somewhere in-between (the week, evening, or morning before the shots). Participants who chose to find out any time prior to the moment immediately before the shots were asked why they would want to know earlier; nearly 50% responded that they wanted to mentally prepare for the event. Those authors also concluded that it was more important to people to be able to mentally prepare for the event than to minimize dread.

To summarize, Study 3 findings suggest that people would prefer to know they have to repeat the task ahead of time because they think it will reduce negative affect during the initial task, although this prediction is inaccurate.

General Discussion

This research indicates that compared to people who don't expect to repeat a boring task, expecting to repeat it results in people feeling worse the first time they perform the task. Although it seemed plausible that people might try to make the task seem better if they knew they had to do it twice, results were inconsistent with this possibility even when people had a motivation for doing the task. Yet, when it comes to people's naïve theories on this topic, people tended to believe the opposite of what we found- that knowing would not make them feel worse and might even make them feel better. Furthermore, the correlation between how people thought knowing would make them feel and their preferences about whether to know or not suggest these beliefs predicted whether people said they would prefer to know the task must be repeated or not. Thus, people wanted to know about the task being repeated because they thought it would help them feel better during the first task, but the data suggest the opposite.

Is the expectation effect harmful or beneficial?

If expecting to do the task twice makes the initial task seem worse, then this expectation effect might be maladaptive as far as actually getting through the tasks. Experiencing additional negative affect during the first task in anticipation of the second task might make it harder for people to stay motivated to get through both of them. It also might be that knowing about the second task limits peoples' abilities to use affect regulation strategies to improve their affect. For example, people who think they are doing the task once might be able to reduce negative affect by looking forward to the task ending; they might feel better by thinking about the relief of not doing the task anymore and the less negative feelings that might be brought on by whatever comes after the task. In contrast, people expecting the second task might not be able to do this because the end is not near for what comes after the task is more of the same task. Study 3

indicated that this is a common belief; many participants said that the reason they would feel worse was because they would be happier if they believed that the task was going to be over soon. Indeed, Matsumoto and Sanders (1988) found that an extrinsically motivated task was experienced more positively as the end drew nearer because people were happy that it was ending.

Therefore, we considered the possibility that the difference between task affect when knowing versus not knowing could be because the unexpected group successfully improved affect rather than the expected group feeling worse. In another study, we randomly assigned participants to either the expected or unexpected condition, then asked them to report their affect 4 times during the 8 minute task (at 1, 3, 5, and 7 minutes into the task). The same pattern was observed for both groups; not only did affect not improve as people neared the end of the task, it consistently worsened.[9] When one minute was left, people rated how negative or positive they felt about being almost done with the first task. There was no difference between the expected and unexpected groups, $F(1, 240) = .423$, $p = .516$. Therefore, these data cast some doubt on the possibility that knowing hinders affect regulation, but the issue needs to be examined further.

[9] This study was designed to be a part of this paper, with the goal being to examine people's affect at multiple points in time while they were performing the initial task. In this study participants were stopped multiple times to rate their affect during the initial boring task. This procedure seemed to have led to some confusion, for the interruptions made it unclear to some individuals whether they were completing one task or multiple tasks. In addition, the procedure may have drawn undue attention to people's affective reactions, which could influence how affect is experienced. Thus, when participants were asked to rate their task affect, using similar measures as in Study 1 and 2, analyses revealed no effect of expectation condition (expected $M_{adj} = 3.92$, $SE = .09$, 95% CI [3.74, 4.09], unexpected $M_{adj} = 3.79$, $SE = .09$, 95% CI [3.62, 3.96], $F(1, 239) = 1.04$, $p = .31$, $M_{dif} = .13$, 95% CI [-.12, .37]). But, these nonsignificant findings were in the predicted direction, with the expected group feeling nonsignificantly worse than the unexpected group. A graph of the results is in the appendix. This failure to find significant results could be a result of the procedure creating confusion, altering how affect is experienced, or a result of chance (at 80% power, 20% of the studies are expected to produce nonsignificant findings). With these data in mind, a meta-analysis was conducted using these data and the data from Studies 1 and 2. Cochran's Q indicated that the studies were homogeneous, $Q(2) = 1.57$, $p = .46$, $I^2 = 0$. The meta-analysis revealed that expectations had a significant effect on task affect, $d = 0.24$, $SE = 0.076$, $p = .002$, such that expecting to repeat a boring task results in people viewing the first task in a more negative light than not expecting to repeat it.

It also is possible that feeling worse during the first task might be adaptive, if it produces affective benefits later. This process could occur through bracing. As an event draws nearer, people's predictions about it become less positive (Shepperd, Findley-Klein, Kwavnick, Walker, & Perez, 2000; Sweeny & Krizan, 2013). This can be helpful because people tend to find surprising negative events to be worse than expected negative events (Feather, 1969; Mellers, Schwartz, Ho, & Ritov, 1997). Managing expectations this way might help people ensure that they will not be unpleasantly surprised by an outcome and may actually be pleasantly surprised. So, by experiencing the first task as worse, people who expect to do the task twice might protect themselves from being shocked by the unpleasantness of the second task. In Studies 1 and 2, everyone predicted that the second task would increase their negative affect relative to the initial task, but expectations altered the magnitude of this increase. People who had been expecting to do the task twice did not predict an increase in negative affect as large as those who had been unaware of the second task. This smaller increase in negative affect could reflect bracing, for it prevents the need for a dramatic change in affect when the second task arises.

Limitations and Future Directions

This work focused on how expectations of doing a task twice rather than once influence affect during the initial task and predictions about the second task, but raises many questions that were outside the scope of this project. First, does expecting to repeat the task actually cause people to experience less negative affect during the second task? If so, that finding would support the idea that knowing about the second task prior to the first one allows people to brace themselves for the second task. This would provide evidence that people do benefit later from feeling worse during the first task. Perhaps the benefits for affect during the second task outweigh the costs to affect during the first task so that, across the two tasks, bracing would

result in a net improvement in affect. If the costs do not outweigh the benefits, then the expectation effect might just be a consequence of people being wrong about how they will feel during the second task.

In Study 1, the just found out and unexpected groups did not differ in their affect ratings, suggesting that a) people must know about the second task for some minimum amount of time for it to influence task affect or b) people must know while they are doing the first task, or both. Would the expectation effect be the same if, rather than finding out about the second task prior to doing the 8-minute task, the expected group found out after the task, but 8 minutes prior to rating task affect? On one hand, expecting to repeat the task might cause people to form a different impression of the task the first time they do it. On the other hand, work by Galak & Meyvis (2011) suggests that people could also adjust their memory of the task. Future research should examine whether knowing while doing the task the first time has an effect on task affect over and above the effect of simply knowing for an amount of time as long as the task (regardless of what one is doing during that time).

Also, the expectation effect was clear from the 20-item measure of negative affect focusing on boredom, but not when we simply asked participants how bad the task was. It could be that a measure aimed specifically at boredom rather than general badness of the task better reflects how the task experience changes when people expect to repeat it. Or, it could also be that the multiple item measure is much more reliable. Attempts to replicate and extend this finding should take these possibilities into account, as detecting this effect depends on how the affective state of interest is measured.

Next steps in this line of research might also include identifying boundary conditions of the expectation effect. It is unknown whether these findings extend to tasks that are unpleasant in

other ways, for example, physically painful events. It also remains to be seen how this effect applies when the task is a self-initiated, goal-directed behavior, or when people expect to do an unpleasant task more than twice. For instance, Gibbs (1992) found that knowing ahead of time that a task would be repeated multiple times improved ratings of the task. Perhaps if people knew that they would be repeating the negative task over and over again they would be more motivated to improve their affect.

This work suggests that, if the goal is simply to make an unpleasant experience as pleasant as it can be, then it might be best if one does not know that it will happen twice. A doctor may choose not to warn a child that he will be getting two shots and instead focus on getting through them one at a time. A supervisor might let an employee finish writing a tedious report for one branch location before assigning her to write the same type of report for a second location. It seems that getting through the task at hand without knowing it will recur allows the child and the employee to be less miserable during the first tasks.

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APPENDIX A: TABLES

Table 1.

Means, Standard Deviations, and Correlations between Study 1 Variables

Measure	*M*	*SD*	Pretask NA	Task NA	Predicted NA	Task How Bad	Predicted How Bad	Motivation
Pretask NA	3.30	0.83	-					
Task NA	3.68	1.04	.47**	-				
Predicted NA	4.08	1.15	.49**	.87**	-			
Task How Bad	4.15	1.62	.14*	.49**	.48**	-		
Predicted How Bad	5.00	1.61	.17*	.43**	.57**	.79**	-	
Motivation	2.77	1.34	-.23**	-.57**	-.66**	-.58**	-.71**	-

Table 2.

Study 1 Adjusted Means and 95% Confidence Intervals for Task Negative Affect and Predicted Negative Affect by Group

	Expected				Just Found Out				Unexpected			
Affect Measure	N	M_{adj}	*SE*	95% CI	N	M_{adj}	*SE*	95% CI	N	M_{adj}	*SE*	95% CI
Task	72	3.9	0.11	[3.69, 4.12]	73	3.63	0.11	[3.42, 3.84]	72	3.53	0.11	[3.31, 3.74]
Predicted	72	4.2	0.12	[3.97, 4.44]	73	3.94	0.12	[3.71, 4.17]	72	4.11	0.12	[3.87, 4.34]

Table 3.

Study 1 Means and 95% Confidence Intervals for One-item Measures of How Bad the Initial Task Was and How Bad the Second Task Would Be by Group

	Expected				Just Found Out				Unexpected			
Measure	N	*M*	*SD*	95% CI	N	*M*	*SD*	95% CI	N	*M*	*SD*	95% CI
How Bad Task	72	4.49	1.45	[4.11, 4.86]	73	4.04	1.65	[3.67, 4.41]	72	3.93	1.72	[3.56, 4.31]
How Bad Predicted	72	5.24	1.46	[4.46, 5.21]	73	4.84	1.73	[4.46, 5.21]	72	4.92	1.63	[4.54, 5.29]

Table 4.

Means, Standard Deviations, and Correlations between Study 2 Variables

Measure	*M*	*SD*	Pretask NA	Task NA	Predicted NA	Task How Bad	Predicted How Bad	Task PA	Value	Control
Pretask NA	3.03	0.77	-							
Task NA	3.69	1.02	.48**	-						
Predicted NA	4.13	1.19	.40**	.84**	-					
Task How Bad	3.92	1.69	.30**	.61**	.55**	-				
Predicted How Bad	4.86	1.72	.30**	.53**	.64**	.73**	-			
Task PA	2.29	1.11	.16**	.42**	.39**	.45**	.42**	-		
Value	3.08	1.48	-.21**	-.41**	-.45**	-.37**	-.39**	-.38**	-	
Control	3.34	1.40	-.20**	-.25**	-.27	-.22**	-.28**	-.22**	-.33**	-

Table 5.

Study 2 Adjusted Means and 95% Confidence Intervals for Task Negative Affect by Group

	Expected				Unexpected				Total			
Condition	N	M_{adj}	*SE*	95% CI	N	M_{adj}	SE	95% CI	N	M_{adj}	SE	95% CI
Motivation	77	3.58	0.10	[3.39, 3.78]	75	3.38	0.10	[3.18, 3.58]	152	3.48	0.07	[3.34, 3.62]
No Motivation	74	4.02	0.10	[3.83, 4.22]	77	3.78	0.10	[3.59, 3.98]	151	3.90	0.07	[3.76, 4.04]
Total	151	3.8	0.07	[3.67, 3.94]	152	3.58	0.07	[3.44, 3.72]	303	3.68	0.07	[3.57, 3.80]

Table 6.

Study 2 Adjusted Means and 95% Confidence Intervals for Predicted Negative Affect by Group

	Expected				Unexpected				Total			
Condition	N	M_{adj}	*SE*	95% CI	N	M_{adj}	SE	95% CI	N	M_{adj}	SE	95% CI
Motivation	77	3.88	0.12	[3.64, 4.12]	75	3.88	0.12	[3.64, 4.13]	152	3.88	0.09	[3.71, 4.05]
No Motivation	74	4.41	0.12	[4.16, 4.65]	77	4.35	0.12	[4.11, 4.59]	151	4.38	0.09	[4.21, 4.55]
Total	151	4.14	0.09	[3.97, 4.31]	152	4.12	0.09	[3.95, 4.29]	303	4.13	0.06	[4.01, 4.25]

Table 7.

Study 2 Means and 95% Confidence Intervals for One-item Measure of How Bad the Initial Task Was by Group

	Expected				Unexpected				Total			
Condition	N	*M*	*SD*	95% CI	N	*M*	*SD*	95% CI	N	*M*	*SD*	95% CI
Motivation	77	3.87	1.74	[3.49, 4.25]	75	3.59	1.60	[3.20, 3.97]	152	3.73	1.67	[3.46, 4.00]
No Motivation	74	4.12	1.83	[3.74, 4.51]	77	4.10	1.58	[3.73, 4.48]	151	4.11	1.70	[3.84, 4.38]
Total	151	3.99	1.78	[3.73, 4.27]	152	3.85	1.60	[3.58, 4.12]	303	3.92	1.69	[3.73, 4.11]

Table 8.

Study 2 Means and 95% Confidence Intervals for One-item Measure of How Bad the Second Task Would Be by Group

	Expected				Unexpected				Total			
Condition	N	*M*	*SD*	95% CI	N	*M*	*SD*	95% CI	N	*M*	*SD*	95% CI
Motivation	77	4.58	1.9	[4.20, 4.97]	75	4.97	1.56	[4.58, 5.37]	152	4.78	1.74	[4.50, 5.05]
No Motivation	74	4.95	1.80	[4.55, 5.34]	77	4.94	1.61	[4.55, 5.32]	151	4.94	1.70	[4.66, 5.22]

APPENDIX B: MATERIALS

Negative Affect Scale (Studies 1 and 2)

Prompt for pretask affect:
To what extent do you feel the following emotions right now at this moment?

Prompt for task affect:
Please rate how much you felt the following emotions during the typing task.

Prompt for predicted affect:
When (If) you do the task again, how much will you (do you think you would) feel the following emotions while you do the task?

1. apathetic
2. indifferent
3. interested
4. bored
5. dull
6. attentive
7. engaged
8. alert
9. aware
10. absorbed
11. agitated
12. irritated
13. annoyed
14. frustrated
15. restless
16. lethargic
17. weary
18. tired
19. fatigued
20. drowsy

Response Options: Not at all (1) to Extremely (7)

Items 1-5 make up the disengagement subscale
Items 6-10 make up the inattention subscale
Items 11-15 make up the aversive/high arousal subscale
Items 16-20 make up the aversive/low arousal subscale

Positive Affect Scale (Study 2)

1. happy
2. enthusiastic
3. inspired
4. excited
5. cheerful

Task Instructions

Study 1

Next to your computer is a sheet of paper with text printed on it. Your task is to type this text into the box on the next screen. Please be as accurate as possible while typing as quickly as possible. Pay attention to capitalization and punctuation, because they count toward your accuracy. The survey will advance automatically once the task is over. Please continue working until time is up. Type the text quickly and accurately in the box below.

Study 2

Task Instructions - READ CAREFULLY: Next to your computer is a sheet of paper with text printed on it. Your task is to type this text into the box on the next screen. Please be as accurate as possible while typing as quickly as possible. Make sure to go in order from left to right, top to bottom without skipping anything. Pay attention to capitalization and punctuation, because they count toward your accuracy. The survey will advance automatically once the task is over. Please continue working until time is up.

Task Stimulus (Studies 1 and 2)

Oliver Chris…2601 Bobby Ln…632-3162
Oliver Christopher & Katherine…110 Elm Rd…861-8267
Oliver Farms…Farm No 1 Graysville…632-9598
Oliver Katherine V Atty…811 University Dr…238-4926
Oliver Mark…119 Merry Hill Rd…234-6896
Olivett Paul…2036 Chelsea Ln…235-1937
Ollie's Bargain Outlet-State College…1919 S Atherton St…272-1250
Olmsted Chris…233 N Allegheny St…353-4460
Olney Franklin B MD…611 University Dr…234-4774
Olofson Roy A…359 Oakwood Av…238-3592
Olorunnisola Anthony…280 Sunday Dr…237-6274
Olsen And Associates…205 Beaver Av…861-1500
Olsen Architect…539 Church Ln…355-7339
Olsen C…116 Aikens Pl…237-4141
Olsen Cindy…125 Sycamore Dr…278-8666
Olsen Jerry A…313 Creekside Dr…234-6011
Olsen Per…3 Mayes St…235-1687
Olsen Richard…134 Stone Barn Ln…466-2045
Olsen Wes…1045 Karen St…466-3440
Olson Donald & Nancy…1940 Cliffside Dr…238-1179
Olson Doug S…620 E Logan St…353-1175
Olson George E…635 Fairway Rd…237-4004
Olson Jon…193 Sandy Ridge Rd…237-5665
Olson Mark E & Nancy S…123 Ashwood Place…237-6746
Olson Michael…116 Fifth St…343-6484
Olson Nicole…207 River Stone Ln…383-2422
Olson Warren G…1304 Summit Dr…355-4412
Olson Warren G…1304 Summit Dr…353-4931
Olson Willard R…1118 Two Mile Rd…383-4881
Olson Zaltman Assoc Llc…116 Grace Av…364-1308
Olsson Connie & Sven…920 Bayberry Dr…867-6479
Olver Dale R…1933 N Oak Ln…867-4838
Olympus Ndt…60 Decibel Rd…689-1390
Ombalski Daniel…141 Mulberry St…353-1847
Omega Piezo Technologies Inc…2591 Clyde Ave…861-4160
Omeis Anthony H…287 Walizer Rd…383-4676
Omelia Meghan…636 Wiltshire Dr…308-9057
Omiecinski Curtis J…179 Montauk Cir…235-0407
On-Site Massage Team…237-8110
On Time Delivery Inc…5970 S Eagle Valley Rd…692-4721
On Time Delivery Inc…5970 S Eagle Valley Rd…692-5397
Oncea Raymond…R D 3…342-5740
Onder John…185 Hartline Rd…387-4885
Onder Kenneth John…160 Birch Run Rd…387-6783

Ondik Jaclyn…249 1st Ave…308-8420
Ondik M…11 Marvin St…692-4335
Ondik Michael…346 Kradel Ln…237-1857
Ondik Nancy…11 Marvin St…692-4335
Ondo Aaron…300 2nd Ave…339-5081
Ondo B…714 Laura St…342-4131
Ondo David…3474 Black Moshannon Rd…342-7048
Ondo David…208 Gertrude St…342-0576
Ondo R J…221 Mcbath St…234-4118
Ondrejik David J…382 Tow Hill Rd…692-4068
100 Degree Hot Pot…428 Westerly Pkwy…308-8208
141 East Fairmount…141 E Fairmount Av…234-3464
One Hundred Ten Regent Court Condo Assoc…110 Regent Court…235-2581
One On One Fitness Consultants Inc…424 W Aaron Dr…234-1625
O'neal Larry J…215 Woodmont St…466-2054
Oneal Shannon…523 West Dr Apt B…808-6279
O'Neill Charles…137 Skyharbor Dr…692-9801
Oneill David…832 W Lamb St…355-1635
O'Neill George…717 Scott St…342-2191
O'neill J…141 Jefferson Cir…359-7123
O'neill James A…306 E Linn St…355-3161
O'neill John…567 Longbarn Rd…231-1240
O'neill John H…949 Oak Ridge Av…867-3333
Oneill John Patrick…1520 S Allen St…237-2220
O'neill Joy…141 Jefferson Cir…383-2191
Oneill Linda…718 Tussey Ln…237-7134
O'Neill Mike…107 Abbott Ln…235-5540
O'Neill Mike…107 Abbott Ln…235-5320
O'neill Physical Therapy…911 University Dr…237-5134
Onemain Financial…1341 S Atherton St…237-4925
Onischuck Thomas…Penn Five Rd…339-7046
Onkotz Dennis…551 Brush Valley Rd…466-7297
Open Mri…611 University Dr…234-4774
Opportunity Centre Clubhouse…2603 E College Av…867-1454

Motivation Measure (Study 1)

Please rate your agreement with the following statements. 1 = *strongly disagree* to 7 = *strongly agree*

I would not mind doing the typing task again.
It would be hard to get myself to do the typing task again.
I feel ready to do the task again.
I really don't want to do the typing task again.
I desire to do the task again.

Boredom Proneness Scale (Study 1)

Please indicate the extent to which you disagree or agree with the following statements. Use the scale below.

	Strongly Disagree (1)	Disagree (2)	Somewhat Disagree (3)	Neither Agree nor Disagree (4)	Somewhat Agree (5)	Agree (6)	Strongly Agree (7)
It is easy for me to concentrate on my activities (1)	❍	❍	❍	❍	❍	❍	❍
I find it easy to entertain myself (2)	❍	❍	❍	❍	❍	❍	❍
I get a kick out of most things I do (3)	❍	❍	❍	❍	❍	❍	❍
In any situation I can usually find something to do or see to keep me interested (4)	❍	❍	❍	❍	❍	❍	❍
Many people would say that I am a creative or imaginative person (5)	❍	❍	❍	❍	❍	❍	❍
Among my friends, I am the one who keeps doing something the longest (6)	❍	❍	❍	❍	❍	❍	❍
Having to look at someone's home movies or travel pictures bores me tremendously (7)	❍	❍	❍	❍	❍	❍	❍

Many things I have to do are repetitive and monotonous (8)	❍	❍	❍	❍	❍	❍	❍
It would be very hard for me to find a job that is exciting enough (9)	❍	❍	❍	❍	❍	❍	❍
Unless I am doing something exciting, even dangerous, I feel half-dead and dull (10)	❍	❍	❍	❍	❍	❍	❍
It seems that the same old things are on television or the movies all the time; it's getting old (11)	❍	❍	❍	❍	❍	❍	❍
When I was young, I was often in monotonous and tiresome situations. (12)	❍	❍	❍	❍	❍	❍	❍
To make sure you are paying attention, please select "Strongly Disagree" for this statement. (13)	❍	❍	❍	❍	❍	❍	❍

Revised Life Orientation Test (Study 1)

Please indicate the extent to which you disagree or agree with the following statements. Use the scale below.

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
In uncertain times, I usually expect the best. (1)	❍	❍	❍	❍	❍
It's easy for me to relax. (2)	❍	❍	❍	❍	❍
If something can go wrong for me, it will. (3)	❍	❍	❍	❍	❍
I'm always optimistic about my future. (4)	❍	❍	❍	❍	❍
I enjoy my friends a lot. (5)	❍	❍	❍	❍	❍
It's important for me to keep busy. (6)	❍	❍	❍	❍	❍
I hardly ever expect things to go my way. (7)	❍	❍	❍	❍	❍
I don't get upset too easily. (8)	❍	❍	❍	❍	❍
I rarely count on good things happening to me. (9)	❍	❍	❍	❍	❍
Overall, I expect more good things to happen to me than bad. (10)	❍	❍	❍	❍	❍

Intrinsic Motivation Measures

1 (*not at all true*) to 7 (*very true*)

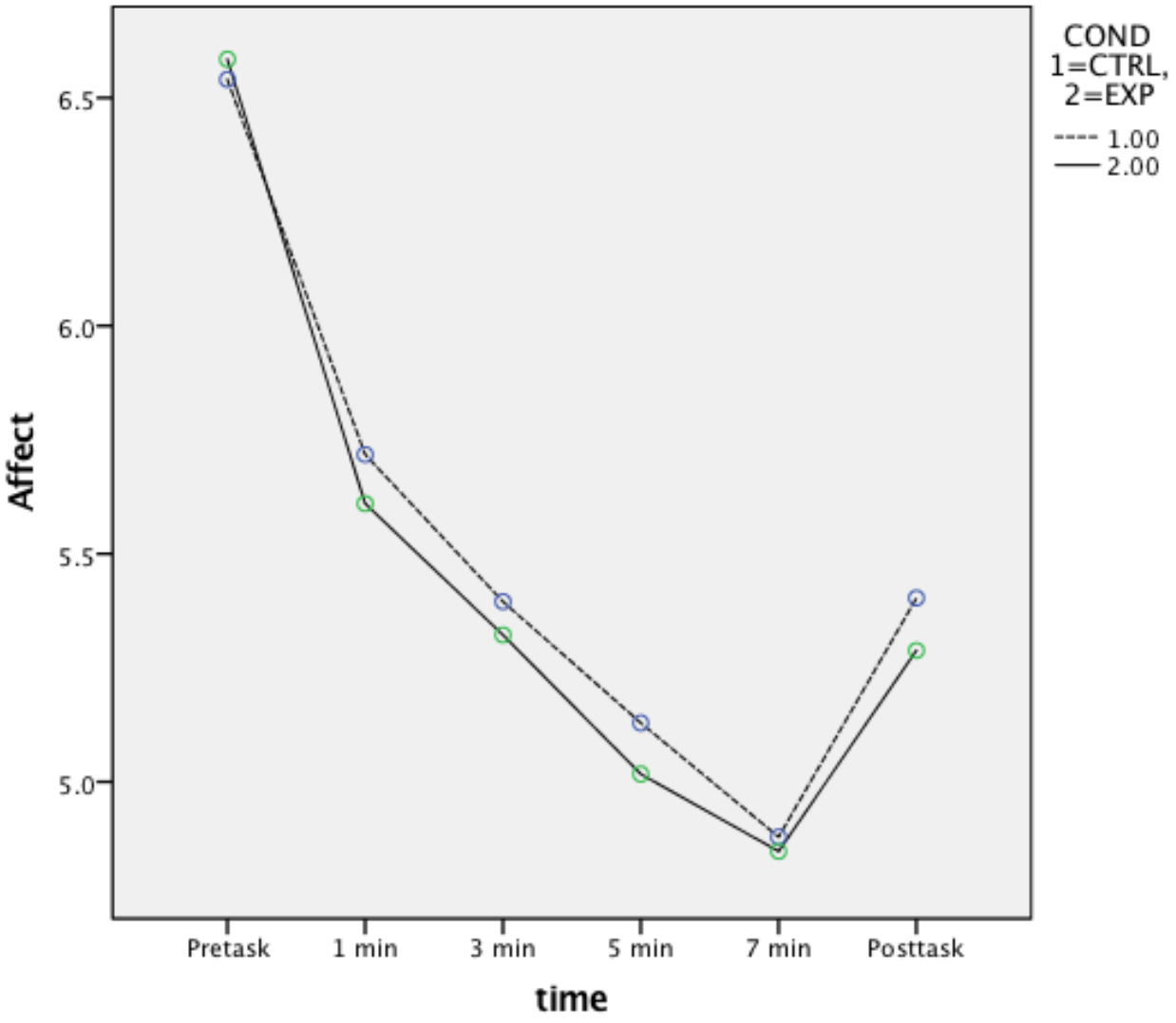
Value items:

1. I think that doing the typing task is useful.
2. I believe doing the typing task could be beneficial to me.
3. I think the typing task is an important activity.

Control items:

1. I believe I had some choice about doing this typing task.
2. I felt like I had to do this typing task. (R)
3. I did the typing task because I wanted to.

Trends in Affect (Study 4)



Note. Lower values indicate greater negative affect. Experimental = Expected group, Control = Unexpected group.