

Emotion

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A Trade-Off Model of Intentional Thinking for Pleasure

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We investigated intentional thinking for pleasure, defined as the deliberate attempt to have pleasant thoughts while disengaged from the external world. We propose a Trade-Off model that explains when and why thinking for pleasure is enjoyable: People focus on personally meaningful thoughts when thinking for pleasure (especially when prompted to do so), which increases their enjoyment, but they find it difficult to concentrate on their thoughts, which decreases their enjoyment. Thus, the net enjoyment of thinking for pleasure is a trade-off between its benefits (personal meaningfulness) and costs (difficulty concentrating). To test the model, we compared intentional thinking for pleasure to four alternate activities in three studies. Thinking for pleasure was more enjoyable than undirected thinking (Study 1) and planning (Study 3), because it was more meaningful than these activities while requiring a similar level of concentration. Thinking for pleasure was just as enjoyable as playing a video game (Study 2) or unprompted idle time activities (Study 3), but for different reasons: It was more meaningful than these activities, but required more concentration. We discuss the implications of these findings for what people might choose to do during idle times.

Keywords: thinking, meaning, meaning in life, cognitive load, enjoyment





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Most people's days are full of responsibilities such as work, household chores, child care, or elder care (U.S. Bureau of Labor Statistics, 2017). Nearly everyone, however, has unscripted idle periods—times when they have nothing to do, or are performing unengaging, routinized tasks that do not fully occupy their minds (Yang & Hsee, 2019). These idle times can last for a few minutes (e.g., down times at work, which are surprisingly common; Brodsky & Amabile, 2018), or seem interminable (e.g., being stuck in traffic). They can be expected (e.g., having a few moments to relax at lunchtime) or unexpected (e.g., encountering a long line at the coffee shop). They can be times when people are free to do

whatever they wish (e.g., those lunchtime breaks), or times when they can do something else while performing routinized tasks (e.g., listening to a podcast while commuting to work).

We investigated a particular way people could spend these idle times, namely retreating into their own minds and thinking about enjoyable topics. After all, everyone has a huge brain that can relive cherished memories, savor upcoming events, and delight in elaborate fantasies. We refer to this mental activity as *intentional thinking for pleasure*, and define it as the deliberate attempt to have pleasant thoughts while disengaged from the external world. This type of intentional thinking is distinct from how most researchers have defined daydreaming and mind wandering, namely as cases in which people's minds wander unintentionally while they are trying to pay attention to an external task, such as reading a book (also called task-unrelated thought; see Seli et al., 2018). In contrast, the type of thought investigated here involves cases in which people intentionally turn their attention inward, with the goal of having a pleasant experience, and our primary dependent measure is how enjoyable the experience is. McMillan et al. (2013; p. 4) referred to this type of thought as “volitional daydreaming,” but noted that there has been little research on the topic (see Wilson et al., 2019, for a further discussion of how intentional thinking for pleasure differs from mind wandering).

Despite its potential appeal, research shows that people do not choose to think for pleasure very often. The 2017 American Time Use Survey, conducted by the Bureau of Labor Statistics, found that only 21% of American adults reported engaging in “relaxing/thinking” over the past 24 hr, even though 96% reported that they performed at least one leisure activity (U.S. Bureau of Labor Statistics, 2017).

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Why do not people spend more time thinking for pleasure? One possibility is that it might feel like they are not doing anything, and research shows that people prefer to be doing something (e.g., looking at their phones) rather than nothing (Hsee et al., 2010; Yang & Hsee, 2019). Another reason is that thinking for pleasure isn't all that pleasurable—at least not in comparison to alternative activities. Research shows that across a wide range of cultures, people report enjoying leisure activities such as reading or watching videos much more than thinking for pleasure (Buttrick et al., 2019), and indeed, when asked to spend just 15 minutes thinking for pleasure, a substantial proportion of participants chose to self-administer painful electric shocks rather than just sitting still and enjoying their own thoughts (Nederkoom et al., 2016; see also Havermans et al., 2015; Wilson et al., 2014).

Subsequent research has shown, however, that people can enjoy their thoughts when given two kinds of assistance: A way to make it easier and a way to make it more meaningful. The purpose of the present studies was to test a model that explains why people enjoy thinking under these conditions of increased ease and meaning, which we will refer to as *facilitated* thinking for pleasure, and to test the potential benefits of this type of thought in everyday life.

Making Thinking for Pleasure Easier and More Meaningful

Intentional thinking for pleasure requires cognitive resources (e.g., having to decide what to think about, concentrating on those topics, keeping competing thoughts out of awareness), and research shows that reducing the cognitive load makes it more enjoyable. Specifically, participants enjoyed thinking more when they were asked to generate thought topics in advance and then were reminded of those topics (Westgate et al., 2017). Other studies show that people enjoy thinking more to the extent that they think about topics they find personally meaningful, defined in terms of people's own subjective experience of meaning (King et al., 2016). For example, Alahmadi et al. (2017) found that participants who thought about family and friends and other social topics, which, research shows, is a source of personal meaning (Debats, 1999; Heintzelman, Mohideen, Oishi, & King, 2020; Lambert et al., 2010; Wong, 1998), enjoyed the thinking period more. Other studies show that inducing people to think about meaningful topics increases enjoyment and reduces boredom (Barbalet, 1999; Fahlman et al., 2009; Locke & Latham, 1990; Moynihan et al., 2021; Westgate et al., 2021). In the present studies, we sought to integrate these previous findings into a model of thinking for pleasure, and to test that model by comparing thinking for pleasure to alternate activities (Studies 1–3). Then, we used the model to make predictions about the conditions under which people would enjoy thinking for pleasure in their everyday lives (Study 3).

The Trade-Off Model of Intentional Thinking for Pleasure

We propose that thinking for pleasure is enjoyable to the extent people focus on personally meaningful thoughts, which increases their enjoyment; but, thinking for pleasure also requires more concentration than participants are able or willing to exert, which makes it less enjoyable. The net enjoyment of thinking for pleasure,

then, is a trade-off between its benefits (finding it personally meaningful) and costs (requiring successful concentration). To be clear, we make no claims that this trade-off is unique to thinking for pleasure. Indeed, both meaning and attention are necessary to avoid boredom and enjoy a variety of activities (van Tilburg & Igou, 2012; Westgate & Wilson, 2018). That is, enjoyment of thinking, like any cognitively challenging activity, requires both the requisite cognitive capacity and the perception that the activity is subjectively meaningful. Hence the trade-off we are proposing: Whereas thinking for pleasure may be conducive to boosting meaning, generating those thoughts often requires more concentration than people are willing or able to give, which lowers enjoyment.

The hypothesis that personally meaningful activities are enjoyable is supported by a good deal of previous research. A sense that one's life has meaning is a major source of happiness; indeed, King et al. (2016) referred to it as a "cornerstone of well-being" (p. 211). Increasingly, researchers are examining the kinds of activities people find personally meaningful (e.g., Heintzelman & King, 2019; Klein, 2017; Machell et al., 2015; Steger et al., 2008; Westgate & Wilson, 2018). Westgate and Wilson (2018, Study 2), for example, found that participants reported a simulated air traffic control task to be more meaningful—and thus more enjoyable—when their performance resulted in donations to charity than when it did not. We suggest that intentionally thinking for pleasure is another task that people can find to be meaningful and thus enjoyable.

That tasks requiring concentration are often unenjoyable is also supported by previous research. Indeed, it is a near truism in psychology that organisms prefer tasks that involve the least effort (Hull, 1943; Inzlicht et al., 2015; Kool & Botvinick, 2018; Zénon et al., 2019). This is not to say that people avoid all effortful tasks or fail to enjoy them. Indeed, a more precise way of stating the relationship between effort and enjoyment is that it is a function of the fit between a person's cognitive resources and the effort required (Inzlicht et al., 2018; Westgate & Wilson, 2018). Westgate and Wilson (2018), for example, showed that people are bored both when they are understimulated (an activity requires less effort than people can expend) or overstimulated (an activity requires more effort than people can expend; see also Fisherl, 1993). Thus, people find tasks to be most enjoyable when there is a good fit between the demands of the activity and the cognitive resources they are willing and able to devote to it.

Our main argument is that these findings about meaning and cognitive effort apply to thinking for pleasure, which has not been thought of as an effortful but potentially pleasurable task. In this respect it can be contrasted with a state of flow, in which people are mentally engaged with a task in a way that seems effortless (Csikszentmihalyi, 2000). Intentional thinking for pleasure, by contrast, is a more deliberate kind of thought that requires successful concentration, which can detract from its appeal. Indeed, in previous studies, participants reported difficulty concentrating while thinking for pleasure, and to the extent they did, they found it less enjoyable (Wilson et al., 2019).

Our use of the term "trade off" is meant to reflect the fact that when people think for pleasure, there are objective costs and benefits, and not that people are necessarily aware of this trade-off. People's awareness of the costs and benefits is an interesting question, and one we return to in the General Discussion. The main purpose of the present studies was to establish the objective nature of the trade-off itself, which we did by comparing intentional

thinking for pleasure against several alternative activities. Again, we did so by studying *facilitated* thinking for pleasure, namely cases in which participants were given examples of topics to think about and thinking aids to make it easier. This allowed us to test the model under optimal conditions of thinking for pleasure. We selected alternate activities that varied in how meaningful they were and how much concentration they required, which allowed us to test the prediction that thinking for pleasure would be more enjoyable to the extent that it is more personally meaningful, but less enjoyable to the extent that it required more concentration.

In Study 1, the alternate activity was asking participants to think about whatever they wanted, with the hypothesis that such undirected thought would be less personally meaningful than thinking for pleasure. We equalized the difficulty in concentration by providing “topic reminders” in both conditions (following Westgate et al., 2017). According to the Trade-Off Model, the net result should be greater enjoyment of thinking for pleasure. We then compared thinking for pleasure to other activities that were expected to differ in meaningfulness and the amount of concentration they required (e.g., playing a video game in Study 2, naturally occurring idle time activities in Study 3). This approach should shed light on when thinking for pleasure is more or less enjoyable than other activities and why.

Study 1: Thinking for Pleasure Versus Undirected Thinking

Method

Overview

Participants were randomly assigned to spend 4 minutes enjoying their thoughts or to think about whatever they wanted. Participants then rated how meaningful the thinking period was, how difficult it was to concentrate, and how much they enjoyed it. We predicted that thinking for pleasure would be more meaningful than thinking about whatever they wanted, but would not require more concentration, resulting in net greater enjoyment.

Participants

Participants were 183 undergraduate students (72% women, 27% men, .5% nonbinary, .5% transgender) from 18 to 42 ($M = 19.07$, $SD = 2.91$) who participated in exchange for course credit. Sixty percent self-identified as White, 26% as Asian or Pacific Islander, 8% as Black/African American, 5% as Hispanic, and 1% other. Ten participants inadvertently participated in the study on two separate occasions; in each case, we retained data only from their first date of participation. We aimed for a target sample of 100 participants in each of the two thinking conditions, which yields greater than 95% power to detect a $d = .50$, consistent with effect sizes in past research (e.g., Study 1 of Alahmadi et al., 2017). The samples ended up slightly smaller due to participant pool constraints.

Procedure

The study was approved by the IRB at The Ohio State University. Participants took part either individually or in groups of up to four in a laboratory session. Participants were randomly assigned

to one of four computer stations in an unadorned room. A research assistant then collected each participant’s personal belongings (e.g., cell phones, watches, backpacks) and stored them in a separate room for the duration of the 30-minute session. All participants wore noise-cancelling headphones for the duration of the study; all further instruction and dependent measures were delivered on a computer with a Qualtrics program (Qualtrics, Provo, Utah).

Participants were first alerted to the possibility of comprehension checks, and then oriented to a box next to the computer containing index cards to be used later in the study. Next, they indicated their current mood by rating how much anger, anxiety, frustration, boredom, happiness, pride, gratitude, love, sadness, awe, fear, disgust, excitement, shame, and surprise they were feeling, all on 5-point Likert scales that ranged from 1 = *None at all* to 5 = *Extreme*. They also reported how many hours they had slept the previous night.

Participants then learned that there would be a “thinking period” and were randomly assigned to spend that time thinking about whatever they wanted (undirected thought condition) or entertaining themselves with their thoughts (think for pleasure condition). In the think for pleasure condition, participants were given sample topics to think about, such as friends and family (these were the same examples used in the Westgate et al., 2021 study mentioned earlier). In both conditions, participants were asked to write on index cards eight topics they intended to think about. The procedure was identical to the one followed in Alahmadi et al.’s (2017) Study 1, with three exceptions: (a) The thinking period was 4 instead of 6 minutes; (b) participants in the thinking for pleasure condition were allowed to consult their index cards during the thinking period, which Westgate et al. (2017) found reduced concentration and increased enjoyment; and (c) participants in the undirected thought condition also wrote down topics they would think about on index cards and were allowed to consult their cards during the thinking period.¹

Dependent Variables

Enjoyment of Thinking Period. After the thinking period, participants rated how enjoyable, entertaining, and boring the experience was, on 9-point scales labeled 1 = *not at all*, 5 = *somewhat*, and 9 = *extremely*. We created an enjoyment index by averaging across these three variables (with boredom reverse-scored), $\alpha = .91$.

Concentration Index. Participants rated the extent to which their minds wandered during the thinking period and how hard it had been to concentrate on their thoughts, on 9-point scales labeled 1 = *not at all*, 5 = *somewhat*, and 9 = *very much*. We averaged these items to form a concentration index, $\alpha = .73$.

¹We also manipulated, for another purpose, whether participants adopted a 3rd person visual perspective versus a 1st person perspective while thinking for pleasure. Half the participants in the entertain thoughts condition were instructed to picture the topics “from the first-person visual perspective,” whereas the other half were asked to picture the topics “from the third-person visual perspective.” Both groups of participants completed a brief practice session in which they imagined tying their shoes from either a 1st person or 3rd person perspective. As it turned out, this manipulation had no significant effects on any dependent measure, all $ps > .38$. Thus, we report results collapsed across these conditions.

Meaning Index. Participants rated how personally meaningful, psychologically rich, and thought provoking the activity period was, on 9-point scales labeled 1 = *not at all*, 5 = *somewhat*, and 9 = *very much*. We averaged the ratings on these three measures to create an index of meaningfulness, $\alpha = .81$.

Exploratory Measures. We included several exploratory measures and manipulation checks (the Qualtrics file used to run the study, which includes all measures, is included with the online supplemental materials). These included questions about how interesting, complex, and novel participants found their experience to be during the thinking period, and whether they felt there was a deeper purpose to it.² Participants also rated the extent to which the thinking period helped them achieve something they cared about and helped them make sense of things in their life; the extent to which they thought about their chosen topics differently now; how much they felt a sense of community during the thinking period; how much they thought about features of the surrounding environment (including people and objects); and how distracted they were by features of the surrounding environment, all on 9-point scales labeled 1 = *not at all*, 5 = *somewhat*, and 9 = *very much*. Participants also reported about what they thought about during the thinking period.

Results

We predicted that thinking for pleasure would be more personally meaningful than undirected thinking, and that this boost in meaning would lead to greater enjoyment of the thinking period. Consistent with these predictions, participants in the thinking for pleasure condition reported that the experience was more meaningful than did participants in the undirected thought condition, $M_s = 5.85$ versus 5.20 ($SD_s = 1.67, 1.67$), $t(180) = 2.46, p = .02, d = .37$. We predicted that participants would not find it more difficult to concentrate on their thoughts while thinking for pleasure (vs. thinking about whatever they wanted), because participants in both conditions were allowed to consult, during the thinking period, the topics they had jotted down earlier, thereby reducing cognitive load. Consistent with this prediction, the difference on the concentration index was not significant, $t(180) = .70, p = .49, d = .10$. Lastly, as predicted, participants enjoyed thinking for pleasure more than thinking about whatever they wanted, $M_s = 6.39$ versus 5.11 ($SD_s = 1.68, 1.86$), $t(180) = 4.65, p < .001, d = .69$. (The means of the individual items are reported in the online supplemental materials).

We tested the full model with a bootstrapped mediation analysis using 10,000 samples (Process model 4; Hayes, 2013). As seen in Figure 1, there was a significant indirect effect of personal meaningfulness on enjoyment, $a_1b_1 = .17 (.08)$, 95% CI [.03, .33], such that participants in the thinking for pleasure condition reported that the thinking period was more meaningful, and to the extent they did, they found it to be more enjoyable. As expected, the harder it was to concentrate, the less people enjoyed the thinking period, $b_2 = -.31 (.05)$, $t(181) = -5.67, p < .001$, 95% CI [-42, -20]. But, because there was no difference in concentration between the conditions, $a_2 = .11 (.15)$, 95% CI [-.18, .39], $t(181) = .72, p = .47$, path a_2b_2 was nonsignificant; $-.03 (.05)$, 95% CI [-.13, .05].

There were also differences between conditions on some of the exploratory measures, consistent with the hypothesis that thinking for pleasure was more meaningful and enjoyable. For example,

participants asked to enjoy their thoughts reported that there was a deeper purpose to the activity and that they felt more of a sense of community, $t_s(180) > 2.22, p_s < .03, d_s > .33$. The results of the exploratory measures are reported in the online supplemental materials.

In sum, we found that instructing participants to enjoy their thoughts resulted in a more meaningful experience than did instructing them to think about whatever they wanted, and this increase in meaning led to increased enjoyment of the thinking period. One possible interpretation of these results is demand characteristics, namely that participants instructed to enjoy their thoughts felt pressure to report that they did, even if they did not. Note, however, that the instructions did not say anything about having meaningful thoughts, and yet, as predicted, participants in the think for pleasure condition reported that their thoughts were richer and more meaningful. Furthermore, participants wrote down what they had thought about during the thinking period, and a text analysis of their answers, with LIWC text analysis software (Pennebaker et al., 2015), indicated that those in the think for pleasure condition had different kinds of thoughts. For example, they listed more words that conveyed positive emotions, were more likely to include the word “we,” and less likely to contain words about work (these results are consistent with an aggregate analysis across several thinking studies with over 6,000 participants; see Wilson et al., 2019). In short, it seems unlikely that participants were so cooperative that they reported enjoying thinking when they did not; intuited that we wanted them to think about meaningful topics and falsely reported that they did so; and fabricated topics that they had thought about.

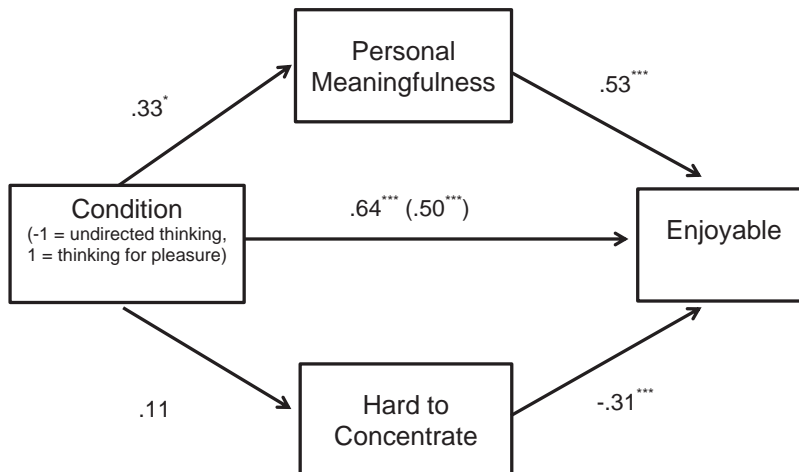
Another possible concern with Study 1 is whether the greater enjoyment in the thinking for pleasure condition was due to the instructions to have a pleasurable experience or to the fact that we gave participants in this condition sample topics to think about. Previous research has shown that giving sample topics does enhance the meaning and enjoyment of thinking for pleasure, but is not necessary for people to enjoy the experience (Westgate et al., 2021). Thus, participants in Study 1 likely found the experience to be more meaningful and enjoyable because of the instructions to think for pleasure and the provision of sample topics.³

The results do not explain, however, why people seldom choose to think for pleasure in everyday life, and instead often choose to engage in external activities such as playing a game on their smartphone. Why are people so prone to spend spare moments on their electronic devices, when they could spend that time thinking about meaningful and enjoyable topics? The Trade-Off model suggests an answer: Thinking for pleasure involves more concentration than participants are willing or able to expend. That is, it may be harder to concentrate on a stream of thought than it is to do a

² We did not include these items in the meaning index in order to be consistent with Study 2, which did not include most of them. The results reported here are nearly identical when we add measures such as purpose to the meaning index.

³ Another question is whether asking participants to list eight sample topics increased the enjoyment of participants in the thinking for pleasure condition, relative to those in the undirected thinking condition. We note that similar differences were found in prior studies in which participants were not asked to list any sample topics or to list three topics (Alahmadi et al., 2017, Studies 2–4).

Figure 1
Study 1: Testing the Trade-Off Model



Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

“mindless” activity on a phone, which lowers the appeal of thinking. We investigated this possibility in Study 2 by directly comparing the meaning and enjoyment of thinking for pleasure with a common alternative activity, playing a simple video game. This comparison involved a further test of the Trade-Off model: We predicted that participants would find it easier to concentrate on playing a video game than thinking for pleasure (thereby increasing enjoyment), but also that playing the video game would be less personally meaningful (thereby lowering enjoyment). An additional purpose of Study 2 was to test a potential moderator of the prediction that thinking for pleasure would be more personally meaningful than playing a video game: dispositional meaning in life, as assessed with the Meaning in Life–Presence (MLQ-P) scale (Steger et al., 2006). These moderation analyses were generally as predicted; for space reasons, we discuss them in online supplemental materials.

Study 2: Thinking for Pleasure Versus Playing a Video Game

Method

Overview

Participants completed the MLQ-P scale early in the semester and then participated in a laboratory session in which they were randomly assigned to spend 4 minutes playing an enjoyable video game or thinking for pleasure. Participants rated the meaningfulness of their activity and how difficult it was to concentrate on it, as well as how much they enjoyed the activity. We predicted that participants would find thinking for pleasure to be more meaningful than playing the video game, increasing enjoyment, but would also report that thinking for pleasure requires more concentration than playing the video game, thus reducing enjoyment.

Data and Variable Exclusions

At the end of the laboratory session, participants completed a variety of exploratory measures to see whether there were any downstream effects of thinking for pleasure versus playing a video game on subsequent attitudes and behavior. We ran the study in three waves, with the only difference being that we added or subtracted these exploratory measures as the study progressed. Because few effects of the manipulation were found on these measures, we report them only in the online supplemental materials.

Participants

Participants were 196 undergraduate students who both participated in our laboratory session and had completed the MLQ-P scale earlier in the semester as part of department-wide pretest. This number allowed us to achieve similar power to Study 1. Participants' mean age was 18.81 ($SD = 1.23$); 67% identified as women, and 33% identified as men; 69% identified as White, 21% as Asian, 8% as African American, 2% as Hispanic, and 1% as others.

Procedure

The study was approved by the IRB at the University of Virginia. Participants took part individually in a laboratory session. After storing all of their personal belongings, they were seated at a computer in an unadorned room where they completed the remainder of the study. All further instruction and dependent measures were delivered via a Qualtrics program. Participants first answered some questions about the past psychology classes they had taken and the number of hours they had slept the previous night. They then indicated their current mood by indicating how happy, bored, irritable, stressed out, attentive, and sad they were feeling on 5-point Likert scales that ranged from 1 = *very slightly or not at all* to 5 = *extremely*. Participants were then instructed to engage in a 4-minute activity period. In the video game condition (randomly assigned), participants played RatMaze II (<http://pixeljam.com/>)

ratmaze2/), in which they guided a mouse through a maze, receiving points for encountering and eating “cheese.” We chose this game because pilot participants found it enjoyable, and it was available in an open-source format embeddable in Qualtrics (the same game was used in Study 4 of Alahmadi et al., 2017). In the thinking for pleasure condition, participants were asked to entertain themselves with their thoughts, with similar instructions to those used in Study 1.

Dependent Variables

The measures of enjoyment ($\alpha = .89$), difficulty concentrating ($\alpha = .77$), and personal meaningfulness ($\alpha = .86$) were identical to those administered in Study 1. Participants also rated how complex and novel their experience was during the Activity Period on 9-point scales labeled 1 = *not at all*, 5 = *somewhat*, and 9 = *very much*. Participants also wrote a few sentences about what they thought about during the Activity Period.

Results

Consistent with predictions, participants in the thinking for pleasure condition reported that the experience was more meaningful than did participants in video game condition, $M_s = 5.16$ versus 2.48 ($SD_s = 1.71, 1.27$), $t(194) = 12.40, p < .001, d = 1.78$. Also consistent with predictions, participants in the thinking for pleasure condition reported that it was more difficult to concentrate than did participants in the video game condition, $M_s = 4.32$ versus 3.62 ($SD_s = 2.05, 1.72$), $t(194) = 2.57, p = .011, d = .37$. Because of this trade-off, we expected that the net enjoyment of the two activities would be about equal, which was the case, $M_s = 5.82$ versus 6.01 ($SD_s = 1.68, 1.78$), $t(194) = .78, p = .439, d = .11$. We tested the full model with a bootstrapped mediation analysis using 10,000 samples (Process model 4; Hayes, 2013). As seen in Figure 2, there was a significant indirect effect of personal meaningfulness on enjoyment, $a_1b_1 = .616 (.119)$, 95% CI [.403, .873] and reported difficulty in concentration on enjoyment,

$a_2b_2 = -.060 (.035)$, 95% CI [-.152, -.011]. As expected, the increased difficulty in concentrating while thinking for pleasure appears to have cancelled out its beneficial boost to meaning.

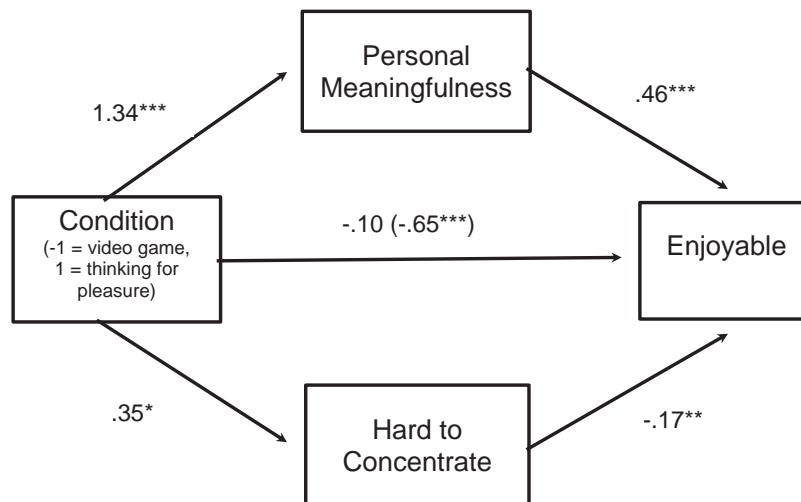
Discussion

As expected, thinking for pleasure was far more personally meaningful than playing the video game (especially for those dispositionally high in MLQ-P; see online supplemental materials), and to the extent it was, participants enjoyed it more. However, thinking for pleasure also required more concentration than did playing the video game, and to the extent it did, participants enjoyed it less. The net result was that thinking for pleasure was about as enjoyable as playing the video game, albeit for different reasons.

A limitation of Studies 1 and 2 is that they were conducted in the laboratory, and it is thus unclear whether people would be willing or able to incorporate thinking for pleasure into their everyday lives. To address this limitation, Study 3 was a field study in which participants were asked to think for pleasure over the course of a typical day, to see whether they would find this mental activity to be as meaningful and enjoyable as did participants in Studies 1 and 2. Study 3 also involved a further test of the Trade-Off model by comparing thinking for pleasure to two new conditions: one in which participants were instructed to engage in planning and the other in which participants were asked to do whatever they typically did during everyday “down times.”

We included the planning condition because in a previous study, participants predicted that planning would be more meaningful and require less concentration than thinking for pleasure, and that they would prefer to engage in planning (Alahmadi et al., 2017, Study 5). We suspected, based on how meaningful participants in Studies 1 and 2 found thinking for pleasure to be, that these forecasts were wrong. We thus predicted that participants asked to think for pleasure during their everyday lives, compared to those asked to engage in planning, would report that the experience was more meaningful and would require about the same degree of

Figure 2
Study 2: Testing the Trade-Off Model



Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

concentration. As a result, they should find thinking for pleasure to be more enjoyable. We did not make firm predictions about how thinking for pleasure would compare to instructions to do whatever participants normally did during down times, because it was difficult to anticipate what these normal activities would be. To the extent that participants spent many of their down times on electronic devices (as would be expected by statistics on device use), we would expect, based on the results of Study 2, that participants would find it more personally meaningful to think for pleasure, but also to require more concentration.

Study 3: Taking a Thinking Break

Method

Overview

Participants attended an initial session at which they received instructions and completed individual difference measures. They were instructed to make note of “down times” on the following day, defined as any time they were by themselves and had at least 2 minutes to do whatever they wanted. Participants were randomly assigned to spend up to five of those down times either (a) doing what they normally do at such times, (b) entertaining themselves with their thoughts, or (c) planning what they would be doing over the next 48 hr. Participants in all three conditions wrote down prompts on index cards to remind them what to do during the down times and were asked to carry these cards with them the following day. After each down time, participants rated the experience (e.g., how enjoyable and meaningful it was) and answered additional questions on a follow-up survey that evening.

Participants

Participants were 178 undergraduate students (79% women, 31% men), mean age = 19.13 (range 17 to 24, $SD = 1.22$). Sixty-seven percent identified as White, 21% as Asian, 4% as African American, 3% as Hispanic, and 5% as other. Participants received course credit or were paid \$10–\$20 for their participation, depending on how much of the study they completed. We aimed to get at least 50 participants per condition with complete data, following recommendations by Simmons et al. (2013). Because we were uncertain what our dropout rate would be, we oversampled this number by approximately 25 participants.

Procedure

The study was approved by the IRB at the University of Virginia. All participants attended an initial laboratory session in groups of up to 30. They received instructions on laptops via a Qualtrics program, as well as on PowerPoint slides narrated by an experimenter. Participants learned that they would be asked to make note of their “down times” the following day, defined as any time they were by themselves and had at least 2 minutes to do whatever they wanted. They were given examples, such as spare times when they were home alone or when they were riding a bus or walking by themselves. The Qualtrics program then prompted participants to list examples of down times they expected to have the next day.

Experimental Conditions. Participants were randomly assigned by the Qualtrics program to one of three conditions. Those in the *thinking for pleasure* condition were instructed to spend up to five of their down times entertaining themselves with their thoughts by thinking about pleasant, enjoyable topics. To prepare for this they wrote down eight topics they would enjoy thinking about on 3×5 index cards connected with a ring, one topic per card. As in the previous studies, several examples of topics were provided. Participants randomly assigned to the *planning* condition were instructed to spend up to five of their down times planning what they would be doing over the next 48 hr. They wrote down eight activities they wanted to plan on the index cards, one per card. Several examples of activities were provided, including classes, assignments, extracurricular activities, and work activities. Participants randomly assigned to the *typical day* condition were instructed to spend up to five of their down times doing whatever they normally do at such times. They wrote eight normal activities on the index cards, one per card. Several examples were given, such as texting someone, talking on the phone, checking social media, reading, resting, and thinking. All instructions specific to participants’ conditions were delivered via the Qualtrics program; the experimenter was unaware of participants’ condition.

Participants in all conditions were instructed to take their index cards home and keep the cards with them the following day. They were asked to take out their index cards and perform the activity they had been instructed to do whenever they had a down time, using their cards as a guide. They were told that they could focus on one card the entire time or on more than one. Participants were asked to repeat this procedure for up to five down times the following day.

Participants were then given a packet of rating cards and instructed to complete one after each down time the following day. There were five rating scales on one side of each card that asked how enjoyable and how boring the down time period had been, and how hard it had been to concentrate on what they chose to think about (rated on 9-point scales with $1 = \text{not at all}$, $5 = \text{somewhat}$, and $9 = \text{very much}$), as well as how personally meaningful the down time experience was and how worthwhile it was (rated on 9-point scales with $1 = \text{not at all}$, $5 = \text{somewhat}$, and $9 = \text{extremely}$). The other side of each card asked participants to record the date and time of the down time period, how long it lasted, what they were doing right before, what they did during the down time, what they thought about, and their university ID. Participants were asked to fill out the rating scales first and then the information on the reverse side for all down periods. Participants were instructed to return the index and rating cards in a postage-paid envelope after completing the study. After learning about the cards, participants answered several comprehension check questions to make sure they understood the instructions. The instructions were repeated for any question they answered incorrectly.

Practice Down Time. Participants then completed a practice down time in order to prepare for the following day. They were asked to imagine that it was the next morning and they had a few minutes to spare after eating breakfast, to consult their index cards, and perform the activity to which they had been assigned. Participants in the typical day condition were asked not to do anything that would disturb other participants (e.g., use their phones) but rather to imagine doing so. They were reminded that the following

day they were free to use their phones or do any of the other activities they had listed. After 2 minutes, participants completed a down time rating card for this practice period. For the remainder of the initial session, participants completed individual difference measures. Little of interest was found on these variables; please see the online supplemental materials for details.

Follow-Up Survey. Participants were emailed a link to a follow-up survey at 7 p.m. the following day and asked to fill it out when they had completed all of their down time activities. They first indicated how happy, bored, irritable, stressed out, organized, cheerful, and relaxed they felt at that moment, on a series of 5-point scales with labels that ranged from 1 = *very slightly or not at all* to 5 = *extremely*. They then rated how their day had been overall, how their physical health was that day, how well-prepared they felt they were for doing what they needed to do over the next two days, and how organized they would say their life was at the moment, all on 9-point scales with appropriate labels on the endpoints and midpoints. Participants then answered several questions about the down times they had experienced that day as part of the study, beginning with how enjoyable, entertaining, and boring the down times were, the extent to which they found their mind wandering, how hard it was to concentrate, the extent to which their goal was to make plans about what they would do later on, the extent to which their goal was to think about things that were enjoyable or entertaining, how personally meaningful their experiences were during the down times, how worthwhile, relaxing, and thought provoking those experiences were, and the extent to which their down time activities were a good use of their time, all on 9-point scales with appropriate labels on the endpoints and midpoints.

To see whether participants' condition influenced the kinds of activities they would prefer to do in the future, they were asked to imagine that they were by themselves and had 5 minutes with nothing to do, such as waiting in line, waiting for their laundry to finish, or home alone. They rated how enjoyable it would be to do each of five activities during these times: to try to enjoy their thoughts, to plan what they would be doing over the next 48 hr, to spend time thinking in some other way, to do something on their phones, and to watch TV, all on 9-point scales with 1 = *not at all enjoyable*, 5 = *somewhat enjoyable*, and 9 = *extremely enjoyable*. They then rated how worthwhile it would be to do the same five activities on 9-point scales with 1 = *not at all worthwhile*, 5 = *somewhat worthwhile*, and 9 = *extremely worthwhile*. Participants then completed the same 5-item life satisfaction scale they had answered at the initial session. They also completed a series of manipulation checks (see online supplemental materials for details). They then received a written debriefing explaining the purpose of the study.

Results

Response Rates and Manipulation Checks

Most participants completed the down time activities and returned their rating cards ($N = 163$, 92%), with no differences between condition, $\chi^2[2] = 1.99$, $p = .37$. A large percentage completed the follow-up survey ($N = 169$, 95%). Participants completed and rated an average of 4.46 down times ($SD = .96$), with no significant differences between conditions, $F(2, 160) = 2.24$, $p = .11$.⁴ Most participants answered the manipulation check

questions appropriately; see online supplemental materials. We analyzed all available data for each variable.

What Did People Do During the Down Times?

Participants in the typical day condition spent a large proportion of their down times using electronic devices (49%). The next most frequent activities in this condition were thinking (14%), studying (6%), conversation (5%), walking/exercise (5%), and reading (3%).⁵ Participants in the thinking for pleasure condition spent most of their down times thinking (60%), followed by walking/exercising (17%), using electronic devices (4%), and showering (3%). (Note that participants in this condition could have been doing their assigned thinking activity while exercising or showering.) Participants in the planning condition spent most of their time thinking (51%), followed by using electronic devices (16%), walking/exercising (10%), studying (5%), and showering (2%). These results suggest that we were largely successful in getting participants in the thinking for pleasure and planning conditions to turn their attention inward (see online supplemental materials for further details).

Tests of the Trade-Off Model

In order to test the Trade-Off Model, we averaged participants' ratings of their down time experiences.⁶ We first compared the thinking for pleasure condition to the planning condition. As expected, participants in the thinking for pleasure condition found the experience to be more meaningful than did participants in the planning condition, but participants in the two conditions found it equally hard to concentrate (see Table 1). The Trade-Off model predicts that this should result in higher enjoyment in the thinking for pleasure condition, mediated by the increased meaning. As seen in Figure 3, these predictions were confirmed. The indirect effect of condition through personal meaningfulness on enjoyment was significant, $a_1b_1 = .28$, $SE = .08$ (95% CI [.14, .46]), but the indirect effect of condition through difficulty in concentrating on enjoyment of was not, $a_2b_2 = .04$, $SE = .05$ (95% CI [-.05, .16]). This pattern, we note, is similar to the results of Study 1, in which we compared thinking for pleasure with thinking about whatever one wanted. There, as here, different kinds of thought required equal amounts of concentration. But there, as here, thinking for pleasure was more meaningful, which made it more enjoyable.

Next, we compared the thinking for pleasure condition to the typical day condition. As expected, participants in the thinking for pleasure condition reported that their down times were more personally meaningful than did participants in the typical day

⁴Two people in the typical day condition and one in the planning condition completed six down times, despite our instructions to compute up to five. The results are very similar if these three people are dropped from the analyses.

⁵Participants' reports of what they did during the down times were independently coded by two research assistants. Their percentages of agreement were .85, .85, .88, .88, and .88 for Down Times 1 to 5, respectively. The coders resolved disagreements through discussion. The complete list of activities people reported in each condition can be found in the online supplemental materials.

⁶A mixed effects analysis that included participants as a random effect yielded very similar results to those reported here.

Table 1

Study 3: Average Ratings of down Times During the day by Experimental Condition

Dependent measure	Statistic	Think for pleasure	Planning	Typical day
Enjoy, daily ratings	<i>n</i>	53	45	63
	<i>SD</i>	1.19	1.48	1.39
	<i>M</i>	6.29 ^a	5.26 ^b	5.76 ^a
Boring, daily ratings	<i>n</i>	53	45	63
	<i>SD</i>	1.56	1.45	1.36
	<i>M</i>	3.64 ^a	4.57 ^b	3.63 ^a
Hard to Concentrate, daily ratings	<i>n</i>	53	45	63
	<i>SD</i>	1.49	1.85	1.26
	<i>M</i>	4.33 ^a	4.62 ^a	2.82 ^b
Personally Meaningful, daily ratings	<i>n</i>	53	45	63
	<i>SD</i>	1.49	1.38	1.63
	<i>M</i>	5.74 ^a	4.38 ^b	4.62 ^b
Worthwhile, daily ratings	<i>n</i>	53	45	63
	<i>SD</i>	1.45	1.37	1.47
	<i>M</i>	5.39 ^a	5.08 ^a	5.42 ^a

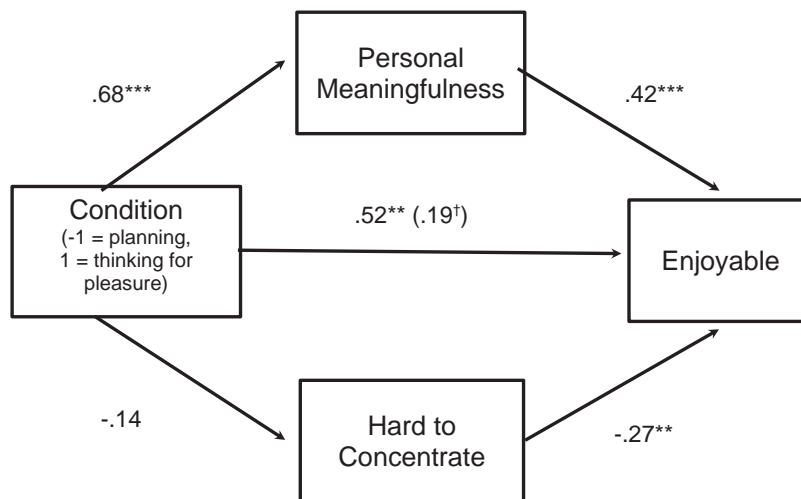
Note. Means with different superscripts differ at $p < .05$ with a Bonferroni post hoc test.

condition, but also that it had been harder to concentrate during the down times—the very trade-off we found in Study 2 when comparing thinking for pleasure with playing video games. As in Study 2, both mediation paths were significant (see Figure 4). The indirect effect of condition through personal meaningfulness on enjoyment was significant in a positive direction, $a_1b_1 = .21$, $SE = .08$ (95% CI [.09, .39]), whereas the effect of condition through difficulty in concentrating was significant in a negative direction, $a_2b_2 = -.17$, $SE = .06$ [−.31, −.07], consistent with the Trade-Off Model.

We should note that there were large differences in the amount of time participants reported spending on their down time activities, $F(2, 158) = 14.76$, $p < .001$, $\eta_p^2 = .157$. Participants in the thinking for pleasure condition spent only about a third as much time ($M = 5.52$ min, $SD = 3.97$) as did participants in the typical day condition ($M = 16.23$ min, $SD = 12.98$) and about half as much time as did participants in the planning condition ($M = 10.53$ min, $SD = 12.18$). One reason for the longer times in the

typical day condition is that some participants opted to watch movies or TV programs during their down times and counted the entire length of these activities as their down times. We note, however, that the average lengths of participants' down times were not correlated with enjoyment, boredom, or personal meaningfulness, $r(159) = .08, -.06$, and $-.12$, $ps = .32, .44$, and $.13$, respectively. There was a negative correlation between the length of the down times and ratings of how hard people said it was to concentrate, $r(159) = -.22$, $p = .005$, and a marginal positive correlation between the length of the down times and ratings of how worthwhile the down times were, $r(147) = .15$, $p = .06$. However, adding the length of the down times as a covariate did not change the significance effects on any of the variables in Table 1. Furthermore, as noted below, we found similar effects of the thinking for pleasure and planning conditions during the practice period people performed the night before the study, in which the length of the thinking period was held constant.

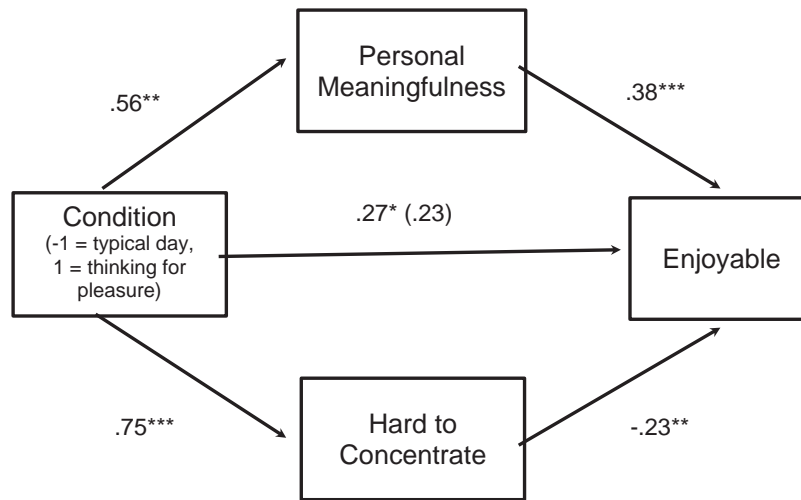
Figure 3
Study 3: Testing the Trade-Off Model, Thinking for Pleasure Versus Planning



Note. † $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

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Figure 4
 Study 3: Testing the Trade-Off Model, Thinking for Pleasure Versus Typical Day Activities



Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

Follow-Up Survey

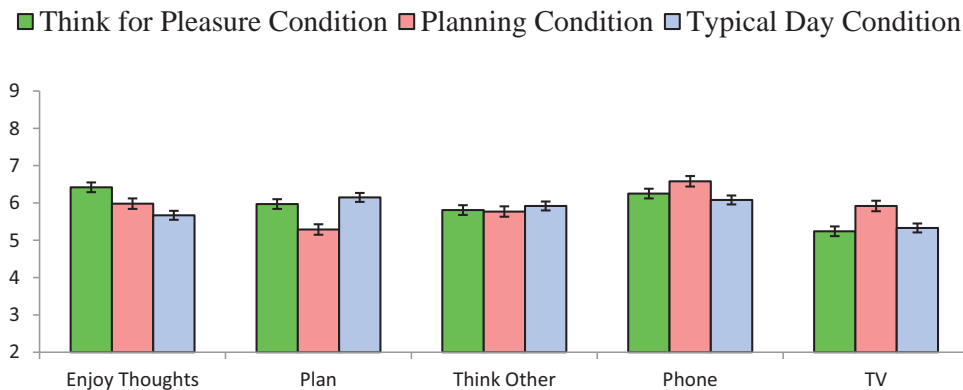
Participants responded to survey questions after completing their down time activities. There were no significant effects of condition on their mood at the time of the survey, ratings of their overall day or physical health, how organized they said they were, or their life satisfaction, $F_s(2, 166) < 1.89, p_s > .15$ (see means in the online supplemental materials, Table S8.) There were differences in how well-prepared participants felt they were for what they needed to do over the next two days, $F(2, 166) = 8.00, p < .001, \eta_p^2 = .09$. As expected, participants in the planning condition said they felt better prepared than did participants in the typical day condition, $M_s = 5.54$ versus 4.26 ($SD_s = 1.53, 1.86$), $p < .001$ with a Bonferroni post hoc test. Unexpectedly, participants in the thinking for pleasure condition also said they felt better prepared than did participants in the typical day condition ($M = 5.00, SD = 1.64, p = .051$), and did not differ significantly on this variable from participants in the planning condition ($p = .31$).

Participants' retrospective end-of-day ratings of the down time activities were similar to their ratings right after performing them. Those in the thinking for pleasure condition rated the down times as equally enjoyable, entertaining, and boring as did participants in the typical day condition, but as more personally meaningful, more thought provoking, and as involving more difficult concentration (see Table S8). To determine whether participants changed their views of how they would like to spend their own times in the future, we asked them how much they would enjoy each of five activities if they had 5 minutes with nothing to do. A 3 (Condition) \times 5 (Activity) between-within ANOVA revealed a significant Condition \times Activity interaction, $F(8, 660) = 2.28, p = .02, \eta_p^2 = .027$, reflecting the fact that condition influenced how enjoyable they would find some of the activities. Univariate ANOVAs on each activity revealed differences in participants' ratings of how enjoyable it would be to try to enjoy their thoughts and engage in planning, $F_s(2, 165) = 3.14$ and $3.36, p_s = .046$ and $.037$,

respectively. As seen in Figure 5, participants in the thinking for pleasure condition reported that it would be most enjoyable to spend the time enjoying their thoughts. The mean in the thinking for pleasure condition was significantly higher than the mean in the typical day condition, $p = .041$ with a Bonferroni post hoc test, although similar to the mean in the planning condition, $p = .50$. In contrast, participants in the planning condition thought it would be least enjoyable to spend the time engaged in planning, significantly less so than participants in the typical day conditions, $p = .040$. There were no significant differences in how enjoyable participants thought it would be to do something on their phones, watch TV, or think in some other way, $F(2, 185) < 1.27, p_s > .28$. In short, experience with thinking for pleasure increased participants' predictions about how much they would enjoy this activity in the future, whereas experience with planning decreased participants' predictions about how much they would enjoy that activity in the future.

We should mention a possible alternative explanation of the results. It could be that trying to enjoy one's thoughts was not itself a meaningful or enjoyable activity, but rather that participants in the thinking for pleasure condition chose to perform that activity when they were in a better mood. That is, participants may have had several down times during their day and those in different conditions could have chosen to perform their activities at different times. There are, however, two sources of evidence inconsistent with this "self-selection" interpretation. First, there were no significant differences across conditions in the time of day participants chose to perform any of their five down time activities, $F_s(2, 114-162) = .26$ to $2.45, p_s = .77$ to $.09$. Second, recall that participants performed a practice down time activity at the laboratory session they attended the night before the study proper. Consistent with the results already reported, those in the thinking for pleasure condition reported that the practice period was more enjoyable, less boring, and more personally meaningful than did participants in the other two conditions, $F_s(2, 153) > 15.29, p_s <$

Figure 5
Ratings of How Enjoyable It Would Be to Engage in Different Activities in the Future



Note. See the online article for the color version of this figure.

.001. This is not entirely a fair test of the typical day condition, because participants were asked to imagine they were doing their everyday activities during the practice period. However, participants in the thinking for pleasure and planning conditions did the same thinking activity they were asked to perform the following day, and the fact that those in the former condition enjoyed it more and found it more meaningful than those in the latter condition, helps rule out a time self-selection interpretation of the findings.

Discussion

Study 3 illustrated that people can think for pleasure in their everyday lives when given a little help (the index card reminders and examples of what to think about). Second, the results provided further support for the Trade-Off Model: Thinking for pleasure was more enjoyable than planning because it was more personally meaningful, while requiring similar levels of concentration. Thinking for pleasure was as enjoyable as participants' normal down time activities, but for different reasons: The increase in meaningfulness made it more enjoyable, but the extra concentration required made it less enjoyable (see Figures 3 and 4).

It is important to note the limitations of Study 3. As with many field studies, it was difficult to control what participants opted to do in their everyday lives, which resulted in the aforementioned difference in the amount of time people spent on their down time activities in the different conditions, with people in the thinking for pleasure condition spending the shortest amount of time. It may be that thinking for pleasure is optimally spent for shorter lengths of time than other activities. In addition, although we found little value in engaging in planning in this study, we certainly do not conclude that planning is never beneficial. There may in fact have been benefits to planning in Study 3 we did not measure; for example, it is possible that participants in this condition were better prepared for the things they needed to get done in the next few days. Indeed, they reported on the follow-up survey that they felt better prepared for what they needed to do than did participants in the typical day condition. However, participants in the thinking for pleasure condition felt as prepared as did participants in the planning condition. Furthermore, participants in the thinking for pleasure condition increased their liking for enjoying their thoughts in the future, whereas participants in the planning condition decreased their

liking for planning in the future, suggesting that participants themselves, after engaging in planning, saw little value in it.

General Discussion

We compared facilitated thinking for pleasure to four alternate activities: undirected thought (Study 1), playing a video game (Study 2), planning (Study 3), and everyday activities of participants' choice (Study 3). We found support for the hypothesized trade-off in each comparison: Participants found thinking for pleasure to be more meaningful than the alternate activity, which increased their enjoyment. Thinking for pleasure involved a similar level of concentration as two of the other thinking tasks (undirected thought in Study 1, planning in Study 3), thus there was no added mental cost to engaging in this particular kind of thought, with the net result that participants enjoyed thinking for pleasure more than these other thinking activities. Thinking for pleasure required more concentration than playing a video game (Study 2) or engaging in everyday activities (Study 3), resulting in the trade-off that the model predicts: more enjoyment due to meaning, less enjoyment due to concentration.⁷

Recent studies by Westgate et al. (2021) illustrate some of the limits of the Trade-Off Model. As noted earlier, thinking for pleasure was especially meaningful and enjoyable when participants were given sample topics to think about, suggesting that people do not spontaneously know or choose to think about meaningful topics. Would it help, then, to directly instruct people to think about meaningful topics? Westgate et al. (2021) found that participants who received these instructions did not report that the thinking period was more meaningful than did participants asked to think for pleasure, but found the experience to be significantly less enjoyable. This result is consistent with research showing that

⁷ Given that the Trade-Off Model treats personal meaningfulness and difficulty in concentrating as independent predictors of enjoyment, we should examine whether these two variables are highly correlated. Previous research has found that they are not, and that they independently predict boredom (Westgate & Wilson, 2018). Consistent with those results, we found weak and inconsistent negative correlations between personal meaningfulness and difficulty concentrating, $r(183) = -.36, p < .001$; $r(195) = -.04, p = .57$; and $r(159) = -.15, p = .054$, in Studies 1–3, respectively. It is thus reasonable to treat them as independent predictors in the model.

meaningful topics are not always pleasurable ones (e.g., thinking about a memorial service for a loved one; Dwyer et al., 2017), and indeed, the thoughts listed by participants in the “think meaningful thoughts” condition of Westgate et al.’s (2021) study had a less positive valence than did the thoughts listed by participants in the thinking for pleasure condition.

It thus seems that people enjoy a quintessentially human activity—turning their thoughts inward—only under a fairly restricted set of circumstances, namely when they think about meaningful topics with a positive valence—which may explain why thinking for pleasure is rare in everyday life. Another reason might be that people are aware of the trade-off involved, and are unwilling to exert the effort to achieve the benefits in meaning and enjoyment. Consistent with this possibility, research shows that even when people know that they will enjoy an activity, they will avoid it if it involves too much effort (Schiffer & Roberts, 2018). To date, however, evidence that people are aware of the trade-off in thinking is inconclusive. In a forecasting study reported in the online supplemental materials to Alahmadi et al. (2017), participants recognized that thinking for pleasure would be meaningful and enjoyable when they were given detailed instructions about the procedure (e.g., that they would get sample topics, as in the current Study 1), but not when they were given fewer details about the procedure. It is unclear, however, whether they knew in advance the conditions under which thinking is enjoyable (e.g., when given sample topics), or whether they realized this only after learning the details. Evidence that people are unaware of the details in advance comes from the fact that participants in the thinking for pleasure condition of Study 3 were more likely to predict that they would enjoy thinking for pleasure in the future than were participants in the typical day condition, suggesting that they appreciated this type of thought more after engaging in it. Clearly more work is needed to establish how much people recognize the trade involved with thinking for pleasure and the conditions under which they willingly engage in this type of thought.

We should note some of the limitations of the present studies. First, they were all conducted with college student participants in the United States; thus, we cannot generalize findings to other ages and cultures. Other studies of thinking for pleasure have, however, used more diverse samples. In a study conducted in 11 countries, Buttrick et al. (2019) found country-level variation in the degree to which people enjoyed thinking. These differences, however, were attributable to five individual difference variables that varied across the countries, four of which were positively correlated with enjoyment of thinking (need for cognition, openness to experience, meditation experience, and initial positive affect) and one that was negatively correlated (reported phone usage). When country-level differences in these variables were controlled, country-level differences in enjoyment of thinking were no longer reliable.

Another unanswered question concerns the relationship between how meaningful and rich an experience is. In all of our studies, we assessed meaning by asking participants three questions: how personally meaningful the experience was, how psychologically rich it was, and how thought-provoking it was (except in Study 3, in which we asked only the first question due to participants’ time constraints). Because responses to these questions were highly correlated, we averaged them to form a meaning index, which had high reliability ($\alpha = .81$ and $.88$ in Studies 1 and 2, respectively). There is reason to believe, however, that meaningful experiences are not always rich ones, and vice-versa. Oishi and Westgate (2021) distinguished psychological richness from meaning and happiness, and argued that while meaning

in life derives from the sense of contributing to a greater coherent whole, richness derives from novel and complex experiences that change the way people think about the world and their place in it. Nonetheless, many people report leading lives that are both rich and meaningful, and thinking for pleasure appears to be an activity that is both meaningful and rich (e.g., see Tables S1 and S3).

Furthermore, we note that the type of thinking we have studied differs from other kinds of mental activities, such as meditation, in several ways: The thinking periods in our studies lasted for brief periods of time; participants were asked to engage with their thoughts instead of quieting their minds; and they received little training. And it is fair to say that the effects of this type of thinking are more modest than the effects of meditation. There is evidence that meditation has long-term psychological and physical benefits (e.g., Creswell, 2017; Galante et al., 2014). We make no such claims that intentional thinking for pleasure, at least as currently studied, will have similar long-term effects. On the other hand, everyday life can be stressful, and having the ability to enjoy one’s thoughts for a few moments, and find them personally meaningful, can be a useful tool to have in the mental toolbox (King et al., 2016). Study 3 found that people were able to incorporate intentional thinking for pleasure into their everyday lives and found some benefit to it (e.g., they were particularly likely to say they would enjoy thinking for pleasure in the future). It will, of course, take further research to see how willing and able people are to engage in this type of thought on a more regular basis.

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