Emotion

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With a Little Help for Our Thoughts: Making It Easier to Think for Pleasure

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Can people enjoy thinking if they set their mind to it? Previous work suggests that many people do not enjoy the deliberate attempt to have pleasurable thoughts. We suggest that deliberately thinking for pleasure requires mental resources that people are either unwilling or unable to devote to the task. If so, then people should enjoy pleasant thoughts that occur unintentionally more than pleasant thoughts that occur intentionally. This hypothesis was confirmed in an experience sampling study (Study 1) in which participants were contacted 4 times a day for 7 days and asked to rate what they had been thinking about. In Studies 2–5 we experimentally manipulated how easy it was for people to engage in pleasurable thought when given the goal of doing so. All participants listed topics they would enjoy thinking about; then some were given a simple "thinking aid" that was designed to make this experience easier. Participants who received the aid found the experience easier and enjoyed it more. The findings suggest that thinking for pleasure is cognitively demanding, but that a simple thinking aid makes it easier and more enjoyable.

Keywords: thinking, emotion, mental control, subjective well-being, boredom

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Conscious human thought, one of the pinnacles of evolution, has many purposes, including planning for the future, problem solving, and decision making (Baumeister & Masicampo, 2010; Gollwitzer, 2012; Harkin et al., 2016; Phillips, Fletcher, Marks, & Hine, 2016). One potential use of conscious thought, however, has received little attention—trying to think for pleasure. When people have a few moments to spare they could direct their thoughts to pleasant topics in order to pass the time enjoyably or to reduce stress. And yet, recent research has found that thinking for pleasure is both uncommon and difficult (Alahmadi et al., 2016; Buttrick et al., 2016; Wilson et al., 2014). In one study, for example, two thirds of men and a quarter of women elected to give themselves at least one painful electric shock during a 15-min thinking period, rather than spending the entire time enjoying their thoughts (Wilson et al., 2014).

Why is it so difficult to enjoy one's thoughts? We suggest that thinking for pleasure is a skill like any other that requires both motivation and ability (Westgate & Wilson, 2016). First, people need to try to do it, and research has found that left to their own devices, people do not try, in part because they underestimate how enjoyable thinking for pleasure would be (Alahmadi et al., 2016). Second, even when people are motivated to try, enjoying one's thoughts is not easy. Just as it is difficult to be happy when deliberately attempting to do so (Mauss, Tamir, Anderson, & Savino, 2011; Schooler, Ariely, & Loewenstein, 2003), it may likewise be difficult to initiate and maintain enjoyable thoughts for very long. Doing so requires that people select topics that they enjoy thinking about, initiate thinking about those topics, monitor their thoughts to make sure that they stay on topic, and keep competing thoughts out of consciousness, all of which tax cognitive resources (Wegner, 1994).

In the present studies, we tested the hypothesis that intentionally thinking for pleasure is not very enjoyable because it requires mental control that people are unwilling or unable to exert. More specifically, we hypothesized that it is surprisingly difficult for people to deliberately generate enjoyable thoughts and keep their attention on those thoughts. But, we predicted, people will find thinking more enjoyable if they are given a "thinking aid" that reduces cognitive load.

The study of conscious attempts to enjoy one's thoughts is important for both theoretical and practical reasons. For centuries, philosophers and psychologists have debated the role of conscious thought, with the pendulum swinging between the view that consciousness is largely epiphenomenal—the real action in the mind occurs unconsciously—and the view that conscious thought serves many important functions (e.g., Bargh, 1997; Dijksterhuis & Nordgren, 2006; Flanagan, 1992; Pockett, 2004; Wegner, 2002; Wilson, 2002). Baumeister, Masicampo, and Vohs (2015) reviewed

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evidence for nine functions of conscious thought: mental simulation and practice, making plans, anticipating emotions, perspective taking, logical reasoning, reflecting and interpreting, self-affirmation, communicating, and overriding automatic responses. Strikingly absent from this list is a possible affective function of consciousness. Given that the pleasure principle is one of the strongest of all human motives, one might expect people to use conscious thinking to improve their mood or reduce stress. And yet, for the most part, they do not. Is it simply too difficult to use conscious thought for this purpose? The present studies addressed this question.

The present studies also speak to concerns about the omnipresent role of technology in modern society. One survey found that teenagers in the United States spend more time consuming media than they do sleeping (an average of 9 hours a day; Common Sense Census, 2015) and many observers have expressed alarm about the dangers of becoming too reliant on electronic devices (e.g., Carr, 2011; Kushlev & Dunn, 2015; Powers, 2010; Wayne, 2016). One reason electronic devices are so appealing may be that people do not find it very easy to enjoy their own thoughts. It is thus important to examine the conditions under which people might be better able to enjoy thinking.

There has been a great deal of research on related topics, such as the strategies people use to regulate positive emotions (e.g., Folkman & Moskowitz, 2000; Gross, Richards, & John, 2006; Koole, 2009; Tamir, 2016; Tugade & Fredrickson, 2007), and interventions designed to increase positive mood and well-being, including savoring, reminiscing, imagining one's best possible self, expressing gratitude, and practicing loving kindness meditation (Quoidbach, Mikolajczak, & Gross, 2015). Few studies, however, have addressed the extent to which people can use conscious thinking alone, in the absence of any engagement with their environment, to accomplish these goals. Savoring, for example, is typically defined more broadly than enjoying one's thoughts; it includes social interaction (talking with others about positive experiences) and focusing on positive events as they are experienced (e.g., Bryant & Veroff, 2007; Jose, Lim, & Bryant, 2012). Other positive mood interventions involve writing exercises, guided imagery, showing people photographs, or asking them to repeat phrases, rather of examining the role of conscious thought alone (e.g., Davis et al., 2016; Hutcherson, Seppala, & Gross, 2008; King, 2001; Pinquart & Forstmeier, 2012; Quoidbach, Wood, & Hansenne, 2009; Sheldon & Lyubomirsky, 2006; Zeng, Chiu, Wang, Oei, & Leung, 2015).[1] In contrast, we addressed how well people can use only their thoughts in the absence of external experiences. In other words, when left to their own devices, can people intentionally steer their thoughts in enjoyable directions?

Intentional thought has been studied in other domains, such as the role of deliberative mindsets in choosing which goal to pursue (Gollwitzer, 2012). Seli, Risko, and Smilek (2016) found that people sometimes engage in deliberate mind wandering, but did not examine whether the people's goal was to improve their affect or whether they were successful at doing so. Much has been written about daydreaming (e.g., Klinger, 1990; Pope & Singer, 1978; Singer, 1975; Smallwood & Schooler, 2006), but little about how successful people are at intentionally using daydreams to improve their mood. McMillan, Kaufman, and Singer (2013) termed this intentional use "volitional daydreaming," and noted that there is very little research on the topic.

As noted, we hypothesized that deliberately thinking for pleasure is difficult because it taxes cognitive resources. We tested this hypothesis in Study 1 using an experience sampling methodology in which participants received texts on their mobile phones four times a day for 1 week and rated the thought they had just had. We predicted that people would enjoy pleasant thoughts less if they occurred intentionally than if they occurred unintentionally. That is, if thinking for pleasure is difficult because it is effortful, then people should enjoy it less when trying to do it than when pleasant thoughts pop into mind without effort.

Although our main interest was on pleasant thoughts that came to mind intentionally or unintentionally, Study 1 also allowed us to test a broader hypothesis, namely, that all thoughts—positive or negative—trigger more intense emotional reactions if they come to mind unintentionally. This hypothesis is consistent with Morewedge, Giblin, and Norton's (2014) argument that people attach more meaning to spontaneous thoughts. For example, thoughts about an old flame might trigger more intense emotional reactions, be they positive or negative, if they pop into mind unintentionally than if they come to mind as the result of an intentional memory search. Again, our interest is primarily in the conditions under which people enjoy thinking about pleasurable topics, but Study 1 also tested the more general *spontaneity intensification* hypothesis, that all thoughts have more emotional impact (positive or negative) when they occur unintentionally.

Studies 2–5 tested our hypothesis about deliberately thinking for pleasure—that it is difficult but is more enjoyable under conditions that reduce cognitive load—in more controlled experimental settings in which people were instructed to entertain themselves with their thoughts. Some participants were given a simple thinking aid that was designed to make this experience easier and more enjoyable by reducing the amount of mental control necessary to do the task.

Study 1

Method

Participants. The number of participants in this and all subsequent studies was determined by power analyses (using our best estimate of the expected effect size), constrained by the number of participants that were available to us in a particular semester. In Study 1 we aimed to run at least 150 undergraduate psychology students. We ended up with 175 participants (119 women, 50 men, 6 declined to answer) between the ages of 18 and 22 ($M = 18.83$, $SD = 1.09$). Fifty-five percent of students identified as White/Caucasian, 25% as Asian, 9% as Black/African American, 7% as Hispanic, and 4.7% as either Pacific Islander or other.

Procedure. Participants were recruited from the department of psychology participant pool or paid pool. Laptop and mobile

[1] One study asked participants to think, write, or talk about the best experience of their lives for 15 min on three consecutive days (Lyubomirsky, Sousa, & Dickerhoof, 2006). There were no measures of affect right after these exercises, however, thus their immediate effects are unknown. Four weeks later, participants in the think condition reported higher life satisfaction than did participants in the write and talk conditions, but their life satisfaction was not significantly higher than that of a no-treatment control condition. Thus, the affective benefits of thinking for pleasure are unclear.

phone ownership were required for participation. In Part 1, participants attended a training session in the laboratory in groups of up to 50 people. After administering informed consent, the experimenter explained the thought inventory that would be used in the second half of the study, including the various thought categories and rating scales. All participants then participated in a brief quiz to test their understanding and were guided through a practice session on their mobile phones. Following the practice exercise, participants spent the remainder of the session completing individual difference measures. Participants were compensated with either course credit or $10 payment for this session.

Part 2 of the study consisted of an experience sampling procedure that took place the week following the laboratory session. Participants received texts four times a day between the hours for 10 a.m. and 10 p.m. for seven days. Notification times were determined randomly, with one notification sent within each one of three 3-hr intervals (10 a.m.–1 p.m., 1–4 p.m., 4–7 p.m., 7–10 p.m.). Participants were asked to respond immediately to the notification by clicking a link to an online questionnaire optimized for a mobile browser (Qualtrics, Provo, UT). We emphasized that they should not respond while driving or engaging in other activities in which it would be dangerous to use their mobile phones. Participants who could not immediately respond to the text message were asked to note their thoughts and respond as soon as possible thereafter. Participants received additional course credit or $5 payment if they responded to at least one text message during the thought sampling portion of the study.

Measures

Thought inventory categories. Participants first categorized the thought that had been in their minds by selecting one or more of 16 categories from a drop-down menu. Three of these were external categories that involved focusing on the environment: "paying attention to something external," "problem solving-external," and "conversation with someone." Nine were internal categories: "problem solving-internal," "flow," "rumination," "daydreaming," "thinking about what you want to do in the future," "recalling memories of the past," "musing," "engaged in meditation," and "thought suppression." Three of the categories were neither internal nor external: "bored/tired," "not thinking about anything," and "not conscious" (see supplementary materials for the exact wording of these categories). Participants also could choose "other," in which case they were asked to describe what they had been thinking about. Participants then rated the thought on the following dimensions:

Attention. The extent to which they were trying to pay attention to an external stimulus on a 7-point Likert scale ranging from 1 (*not at all, a great deal of internal thought*) to 7 (*fully absorbed, no internal thought*), with a midpoint of 4 (*half-and-half; paying attention but also thinking my own thoughts*).

Thought valence. The valence of the thought on a 7-point Likert scale ranging from −3 (*Very negative*) to 3 (*Very positive*), with a midpoint of 0 (*Neutral*).

Control. How much they were trying to control the content and direction of the thought on a 7-point Likert scale ranging from 1 (*Not at all*) to 7 (*Trying very hard*).

Desirability. How much they wanted to be thinking the thought versus thinking about something else on a 7-point Likert scale ranging from 1 (*Very much wish I was thinking about something else*) to 7 (*Very much want to be doing this*), with a midpoint of 4 (*Neutral*).

Intentionality. How much they intended to begin having that thought on a 7-point Likert scale ranging from 1 (*Not at all; do not know why I started thinking about this*) to 7 (*Intentionally decided to start thinking about this*).

Importance. How personally important the content of the thought was on a 7-point Likert scale ranging from 1 (*Trivial or unimportant to me*) to 7 (*Very important/matters a lot to me*).

Temporal orientation. Whether their thoughts were about the past, present, or future on a 7-point Likert scale ranging from −3 (*Past*) to 0 (*Present*) to 3 (*Future*).

Mood. Participants rated their current mood on a 7-point Likert scale ranging from −3 (*Very negative*) to 3 (*Very positive*).

Lastly, participants briefly described what they were doing when they had the thought. Following the study, all participants were debriefed via an Internet link texted to their mobile phones.

Results

Descriptive statistics and preliminary analyses. On average, participants responded to 18 of the 28 text messages (M = 17.88, SD = 9.44). Participants who responded to fewer than five texts were excluded from the analyses, leaving a sample of 145 participants. Results were similar when all participants were included. Among participants who provided data for five or more time-points, the average response rate was 19.74 (SD = 8.16) out of 28 possible responses. The thought inventory categories appear to have been exhaustive, because participants listed a thought as "other" only 50 of 3,044 times (1.64%). These thoughts were independently recoded by two research assistants as belonging to one of the 16 thought categories listed on the inventory (74% agreement).

Percentages of different types of thought. We first classified participants' thoughts as internally focused, externally focused, or instances of divided attention, as follows: If participants checked an internal category (e.g., daydreaming) and reported that they were trying to pay attention internally (i.e., their response was at the midpoint or lower on the question about "paying attention to something external"), the thought was classified as internally focused. If participants checked an external category (e.g., problem solving, external) and reported that they were trying to pay attention externally (i.e., their response was above the midpoint on the question about "paying attention to something external"), they were classified as externally focused. If participants checked an internal category (e.g., daydreaming) but reported that they were trying to pay attention externally, or if participants checked an external category (e.g., problem solving, external) but reported that they were trying to pay attention internally, they were classified as having divided attention. Using this coding scheme, we found that participants were internally focused 20.6% of the time, externally focused 40.4% of the time, and had divided attention 32.6% of the time.

To test our hypothesis that people would enjoy pleasant thoughts less if they occurred intentionally than if they occurred unintentionally, we further subdivided participants' thoughts using their ratings of how much they intended to be having the thought

and how desirable that thought was.[2] Median splits on these variables resulted in the categories displayed in Table 1. Of main interest were the desirable internally focused thoughts participants reported having and whether these thoughts occurred intentionally or unintentionally. As seem in Table 1, intended, desirable, internally focused thoughts represented 6.8% of all thoughts (range = 0% to 40%) whereas unintended, desirable, internally focused thoughts represented 6.4% of all thoughts (range = 0% to 67%). Table 1 also shows the frequencies of other kinds of thoughts.

We hypothesized that internally focused thought is less enjoyable when it is unintended and desirable than when it is intended and desirable. We tested this hypothesis using regression analyses that treated attentional focus, intentionality, and desirability as continuous measures (as opposed to the median splits used to categorize thoughts in Table 1) to predict thought valence and mood. Because the existence of multiple data points for the same individual violates assumptions of independence, we investigated these questions using mixed effects models with a random effect of participant. First we tested the fully saturated model that included the thought category participants checked (internal vs. external), attentional focus, desirability, and intentionality, and all 2-, 3-, and 4-way interactions to predict both thought valence and mood. All predictors were centered on a rational zero midpoint. We then fine-tuned the regression using a stepdown procedure, eliminating one-by-one higher-order terms in the model that did not contribute significantly to the outcome variable. Following this procedure, we independently arrived at very similar models for mood and thought valence.[3]

Valence. As shown in Table 2, there were significant main effects of attentional focus and desirability ratings on participants' ratings of how positive versus negative their thoughts were, reflecting the fact that participants rated their thoughts more positively if they were trying to pay attention to an external stimulus and if they had desirable thoughts. There were also three significant two-way interactions. First, consistent with the spontaneity intensification hypothesis, there was a significant Intended × Desirable interaction, reflecting the fact that unintended thoughts were rated more positively when they were desirable but more negatively when they were undesirable (predicted means are shown in Figure 1). This pattern was not qualified by higher-order interactions, for example, with whether participant's thoughts were externally or internally focused, suggesting that unintended thought has more affective weight under most circumstances.

Our main hypothesis was that participants would rate intended, desirable, internally focused thoughts as less enjoyable than unintended, desirable, internally focused thoughts. As seen in Table 1 and Figure 1, this hypothesis was supported by estimates calculated from the mixed model. The estimated marginal mean valence for intentional, desirable, internally focused thoughts (M = 1.17, 95% CI [1.01, 1.33]) was less positive than the marginal mean for unintentional, desirable, internally focused thoughts (M = 1.57, 95% CI [1.40, 1.74]). This can be considered a significant difference, given that the confidence intervals do not overlap.

As seen in Table 2, there were two other significant interactions on valence ratings: Thought Category × Desirable and External Attention × Intended. The former reflects the fact that when thoughts were desirable, people gave higher valence ratings when they checked an internal thought category versus external whereas when thoughts were undesirable, participants gave higher valence ratings when they were checked an external thought category versus internal. This is consistent with existing evidence that the valence of internal (vs. external) thought depends greatly on what a person is thinking about, and that negative internal thought may be particularly intense. The latter interaction reflects the fact that when participants were trying to pay attention internally, unintended (vs. intended) thoughts were rated more positively; whereas when they were trying to pay attention externally, intended (vs. unintended) thoughts were rated more positively.

Mood. As seen in Table 3, there were significant main effects of category, attentional focus, and desirability on participants' mood ratings. These findings reflect the fact that participants were in a better mood when they checked an external category, said they were trying to pay attention externally, and had desirable thoughts. These main effects were qualified by two significant interactions. Once again, the spontaneity intensification hypothesis was supported, as indicated by the significant Intended × Desirable interaction: Participants were in a better mood when they had unintended (vs. intentional) desirable thoughts but in a worse mood when they had unintended (vs. intentional) undesirable thoughts (predicted means are shown in Figure 2). The Intended × Desirable interaction was not qualified by higher-order interactions (e.g., with thought category or attention). Our specific hypothesis about internally focused thought was in the predicted direction, though not as strongly as for the valence ratings: Participants were in a less positive mood when they were engaged in intended, desirable, internally focused thought (.52, 95% CI [.30, .74]) than when they were engaged in unintentional, desirable, internally focused thought (.72, 95% CI [.49, .95]). Because the confidence intervals overlap, however, this cannot be considered a significant difference. Nonetheless, the fact that the Intended × Desirable interaction was significant overall provides support for our hypothesis that unintended thoughts lead to more extreme mood ratings, and that pleasant internally focused thoughts (like other pleasant thoughts) are thus likely to be most enjoyable when they occur unintentionally. Finally, there was also a significant Thought Category × Desirable interaction on mood ratings (see Table 3), reflecting the fact that participants were in a worse mood when they had undesirable internal thoughts than undesirable external thoughts, whereas there was little difference in mood when participants had desirable internal versus desirable external thoughts. Again, this suggests that differences in mood between internal and external thought originate in the disproportionate impact of negative internal thoughts.

[2] Ratings of controllability were highly correlated with intentionality. When intentionality and controllability were both included in the model, controllability did not significantly contribute to the outcomes. For this reason, we dropped controllability and retained intentionality in the final analyses. We also measured importance and temporal orientation. Preliminary analyses of importance and temporal orientation yielded no results of interest to this study, thus they were dropped from final analyses. Finally, because accounting for time did not affect model estimates or yield any results of interest, it was dropped in subsequent analyses.

[3] In a small percentage of the cases (8.8%) participants checked both an internal and external category. In order to simplify the analyses, these cases were dropped. The results change little when they are included.

Table 1
Percentage of Thought Types, Valence, and Mood

Type of Thought	Percent	Valence[a]	Mood[a]
Internally focused			
Internal category, trying to pay attention internally	20.6		
Intended, desirable	6.8	1.17	.52
Unintended, desirable	6.4	1.57	.72
Intended, undesirable	4.1	−1.16	−1.10
Unintended, undesirable	3.3	−1.22	−1.24
Divided attention	32.6		
Internal category, trying to pay attention externally	7.2		
Intended, desirable	4.2	1.49	.71
Unintended, desirable	1.5	1.67	.91
Intended, undesirable	.9	−.84	−.90
Unintended, undesirable	.6	−1.13	−1.04
External category, trying to pay attention internally	25.4		
Intended, desirable	10.7	.83	.46
Unintended, desirable	7.1	1.23	.66
Intended, undesirable	6.0	−.74	−.79
Unintended, undesirable	1.6	−.80	−.93
Externally focused			
External category, trying to pay attention externally	40.4		
Intended, desirable	24.8	1.15	.66
Unintended, desirable	9.3	1.33	.86
Intended, undesirable	5.1	−.41	−.60
Unintended, undesirable	1.2	−.71	−.74
Bored/tired or not thinking	4.9		
Uncodable (missing attribute data)	1.7		

Note. Estimates are calculated from the mixed models presented in Tables 2 and 3.
[a] Rated on 7-point scales where −3 = *very negative*; 0 = *neutral*; and +3 = *very positive.*

Discussion

Do people choose to occupy themselves with their own thoughts and if so, do they enjoy it? Participants reported that they were engaged in intentional, desirable, internally focused thought and unintentional, desirable, internally focused thought a small percentage of the time (6.8% and 6.4%, respectively). As predicted, participants rated the former type of thought less positively than the latter, and were in a marginally worse mood when engaging in it.

Finding oneself unintentionally engaged in positive internally focused thought, is, like many instances of mind-wandering, a process largely initiated without executive control or intent (Smallwood & Schooler, 2006; Smallwood & Schooler, 2015), and which therefore may be less cognitively taxing and easier to enjoy than intentional thinking. Deliberately thinking for pleasure, on the contrary, may be difficult to sustain for long periods of time, given that it requires the ability to initiate, monitor, and control one's thoughts, which taxes cognitive resources. The participants in studies by Wilson et al. (2014) may have found it difficult to enjoy their thoughts for this very reason, because they were explicitly directed to entertain themselves by thinking, which made the experience intentional rather than unintended.

Consistent with the spontaneity intensification hypothesis, it was not only reactions to desirable, internally focused thoughts that were intensified when they occurred spontaneously: All types of thoughts had more weight if they occurred without intention, even when the thoughts were externally focused or undesired (see Table 1). That is, participants rated their unintended thoughts more positively when those thoughts were desirable but more negatively when they were undesirable, as indicated by the significant Intended × Desirable interaction on both thought valence and mood. A possible reason for this is that unintended thoughts are given more affective weight because they come to mind with less cognitive effort and thus seem more surprising, thereby requiring additional cognitive restructuring to accommodate them (Clore, 1994). This, in turn, may lead people to attach greater meaning to unintended thoughts (Morewedge et al., 2014).

For present purposes, the main finding of Study 1 was that intentional, desirable, internally focused thoughts that occur in people's everyday lives were not as enjoyable as unintentional, desirable, internally focused thoughts. Like most experience sampling studies, however, ours employed a correlational design, which allows for multiple interpretations. Although it is possible that unintended thoughts led to more extreme affective reactions, it is also possible that people in extreme affective states were more likely to have unintended thoughts, or that thoughts with greater affective significance were more likely to bubble up into consciousness. In addition, thoughts that were classified as unintentional and desirable may have differed from those classified as intentional and desirable in ways other than how intentional they were.

Table 2
Mixed Effects Model of the Fixed Effects of Category, Attention, Desirability, and Intentionality on Thought Valence

Predictor	*b*	*SE*	*t*	*df*	*p*
Thought category (external)	.04 [−.05, .13]	.05	.91	2,345.71	.365
External attention	.05 [.03, .08]	.01	3.77	2,347.61	<.0001***
Desirable	.64 [.60, .68]	.02	28.36	2,335.65	<.0001***
Intended	−.01 [−.04, .01]	.01	−1.15	2,345.23	.250
Intended × Desirable	−.03 [−.04, −.02]	.01	−4.22	2,339.24	<.0001***
Category × Desirable	−.19 [−.25, −.13]	.03	−6.69	2,313.12	<.0001***
External Attention × Intended	.01 [.002, .03]	.01	2.47	2,350.54	.013*
Random effect of participant variance	.11 [.08, .15]	.02	5.73	(Wald *Z*)	<.0001

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

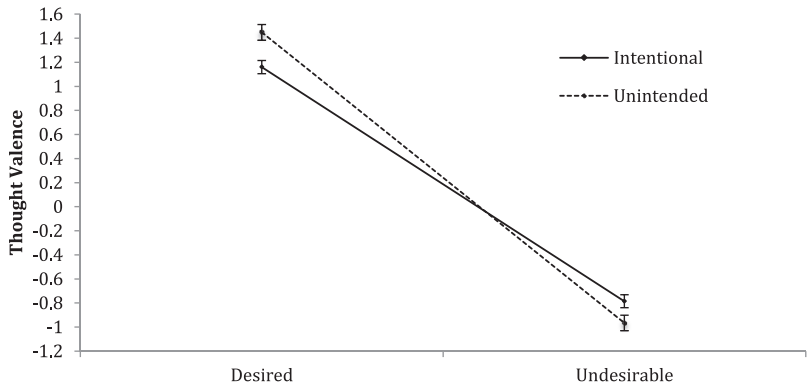

Figure 1. Spontaneity intensification on thought valence: predicted interaction between intentionality and desirability of thoughts on valence ratings.

To address this limitation we used experimental designs in Studies 2–5, manipulating how easily participants could think for pleasure when given the goal to do so. This allowed a direct test of whether making intentional thought easier leads to a corresponding increase in enjoyment. Participants were asked to generate a list of eight pleasurable topics and then spend a few minutes thinking about these topics. As in our previous studies (Wilson et al., 2014), we expected that most participants would find this difficult and not particularly enjoyable. In another condition, participants were given a simple "thinking aid" to make the task easier: the topics they generated were displayed on the computer screen one at a time during the thinking period (Studies 2–4) or were written on index cards that participants could consult (Study 5). We hypothesized that this simple reminder would reduce the cognitive demands of the task (i.e., by eliminating the necessity of recalling the topics they had generated and deciding which ones to think about), thus making it easier and more enjoyable to perform. Because Studies 2–5 used similar methodologies and found similar results, we present them together.

Studies 2–5

Method

Study 2 participants. Participants were 142 undergraduate psychology students (84 women, 58 men, 2 declined to answer) between the ages of 18 and 23 ($M = 19.06$, $SD = .97$). Sixty-one percent identified as White/Caucasian, 20.8% as Asian, 6.3% as Other, 4.9% as Black/African American, 4.2% as Hispanic, .7% as Native American or Pacific Islander, and 1.4% declined to answer. Participants were recruited from the department of psychology participant pool or paid pool, and completed the study individually in a single hour-long laboratory session. They were compensated with either course credit or a $10 payment.

Study 3 participants. Participants were 351 Amazon mTurk workers (210 women, 108 men, 2 other, 16 not answered) between the ages of 18 and 83 ($M = 34.80$, $SD = 12.28$). Fifty-one percent had college or postcollege graduate degrees, 39% had completed some college or 2-year college degrees, and 10% had completed high school/GED equivalent. Eighty percent identified as White/Caucasian, 6.3% as African American, 5.7% as Asian, 4.8% as Hispanic, .6% as Native American, and 3% as Other. All participants were current United States residents. Ninety-two participants opened the program but elected not to participate before they were assigned to a condition, possibly because they were reminded that they needed to be alone and have turned off all electronic devices. An additional 63 participants dropped out at a later point, with no significant difference in attrition by condition, $\chi^2(2) = 2.30$, $p = .32$. We included in the analyses all participants for whom we had data on each dependent measure. Participants were paid $.75--$.85 for their participation.

Study 4 participants. Participants were 466 Amazon mTurk workers (293 women, 168 men, 2 other, 3 no answer) between the

Table 3
Mixed Effects Model of the Fixed Effects of Category, Attention, Desirability, and Intentionality on Current Mood

Predictor	*b*	*SE*	*t*	*df*	*p*
Thought category (external)	.12 [.002, .25]	.06	1.99	2,288.41	.046*
External attention	.05 [.01, .08]	.02	2.67	2,292.40	.008**
Desirable	.45 [.39, .51]	.03	14.65	2,278.08	<.0001***
Intended	−.01 [−.04, .02]	.02	−.49	2,313.92	.624
Intended × Desirable	−.02 [−.04, −.003]	.01	−2.30	2,280.85	.022*
Category × Desirable	−.09 [−.16, −.02]	.04	−2.36	2,259.34	.018*
Random effect of participant variance	.56 [.43, .74]	.08	7.28	(Wald *Z*)	<.0001

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

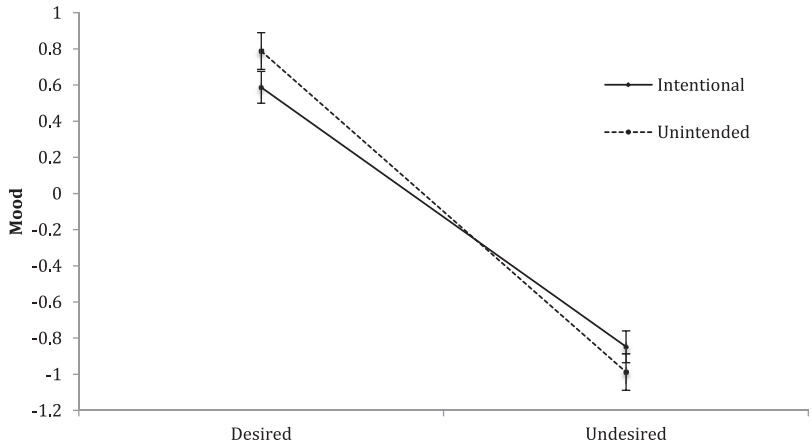

Figure 2. Spontaneity intensification on mood: predicted interaction between intentionality and desirability of thoughts on mood ratings.

ages of 19 and 78 ($M = 34.57$, $SD = 12.05$). Forty-seven percent had college or postcollege graduate degrees, 41% had completed some college or had 2-year college degrees, 10% had completed high school/GED equivalent, and 1% had not completed high school. Seventy-five percent identified as White/Caucasian, 9.4% as African American, 4.7% as Asian, 7.7% as Hispanic, 1.1% as Native American, .4% as Pacific Islander, 1.1% as Other, and .6% did not answer. All participants were current United States residents. One hundred six participants opened the program but elected not to participate before being assigned to a condition. An additional 22 participants dropped out at a later point, with no significant difference in attrition by condition, $\chi^2(2) = 1.72$, $p = .19$. We included in the analyses all participants for whom we had data on each dependent measure. Participants were paid $.85.

Study 5 participants. Participants were 113 undergraduate psychology students (67 women, 44 men, 2 declined to answer) of the ages of 18 to 24 ($M = 18.69$, $SD = .99$). Seventy-five percent of students identified as White/Caucasian, 13% as Asian, 4% as Black/African American, 5% as other. Participants were recruited from the department of psychology participant pool and completed the study individually in a single hour-long laboratory session. They were compensated with course credit.

Procedure. Participants in Studies 2 and 5, who took part individually in a psychology building, stored all of their personal belongings (e.g., mobile phones, watches, and backpacks) in a locker and then completed the study alone on a computer in an unadorned room. Participants in Studies 3 and 4 completed the study online at a time when they were alone and free from distractions. The studies were posted on a weekday night at 8 p.m. Eastern Standard Time to increase the probability that participants were in a relaxed setting at home instead of at work or school. At the end of the study almost all participants (98% in Study 3, 96% in Study 4) reported that they had, in fact, completed the study at home.

In all studies, the instructions and dependent measures were delivered via a Qualtrics program. In Study 2 participants first completed two filler questions about the number of experiments and psychology courses they had completed and then indicated their mood by rating how much they were currently experiencing 14 emotions (8 positive, 6 negative) on a series of 5-point Likert scales that ranged from 1 (*very slightly or not at all*) to 5 (*extremely*). In Studies 3 and 4 participants verified that they were alone and had turned off all electronic devices and possible distractions in the room before beginning the study, and then they completed a shortened mood questionnaire (3 positive emotions, 3 negative emotions). Participants also reported how many hours they had slept the previous night.

Participants were then told that they would spend some time later on in the study entertaining themselves with their thoughts, and that in preparation for this, they should list eight topics they would enjoy thinking about. They were given some examples, such as a specific memory they would enjoy thinking about, something in the future they were looking forward to, imagining a future accomplishment, or thinking about an enjoyable fantasy. Participants were asked to take their time in generating pleasant topics because "what you write may be repeated back to you later in the study."

After listing eight topics, participants were then told that they would be completing a 4-min (Study 4) or 6-min "thinking period" (Studies 2,3, and 5) in which they should "spend the time entertaining yourself with your thoughts as best you can. That is, your goal should be to have a pleasant experience, as opposed to spending the time focusing on everyday activities or negative things." These instructions were intended to make clear that the goal was not to plan their day or think about upcoming stressors, which people sometimes do when not given explicit instructions to the contrary (Alahmadi et al., 2016). Participants were further told that to make the task a little easier, they would be asked to think about the topics they had just listed.

Studies 2–4: Topic reminder versus control conditions. At this point, participants were randomly assigned to the topic reminder or control condition. We detail here slight variations in the instructions and procedures across studies, though these variations ultimately had little impact on the results. In the topic reminder condition, participants were told that during the thinking period the topics would be listed on the screen one at a time in the order that the participant had generated them. In Studies 2 and 3 participants were told that they could think about each topic for as long as they

liked and then advance to the next topic. "You can choose to think about a few topics for a longer time or many topics for a shorter time," they were told. Participants read that if they went through the entire list of topics, the topics would appear again in the same order. The 6-min thinking period then began. Participants' first topic was displayed at the top of the screen exactly as they had written it and remained there until participants clicked to advance to the next topic. The screen automatically advanced to the dependent measures after 6 min had elapsed. If participants cycled through all eight topics before 6 min had elapsed, the topics were displayed again in the same order once (Study 2) or twice (Study 3). In Study 4, each topic was displayed for 30 s and the total length of the thinking period was reduced to 4 min. That is, instead of allowing participants to select how long they thought about a particular topic, each of the eight topics they had listed was displayed on the screen for 30 s in the order that they had listed them. Participants were told in advance that this was the procedure that would be followed.

In each study, the control condition was identical to the experimental condition, except that participants were not given reminders of their topics during the thinking period. In Study 2 participants were told, "You don't have to think only about these topics, but they may be a useful starting point." During the thinking period the words, "Please think about the topics you listed earlier as a starting point" were displayed. To rule out the possibility that giving participants permission to go "off topic" made the experience less structured or less enjoyable, we included an additional control condition in Study 3, in which participants were told to think *only* about the eight topics they listed earlier, instead of using these topics "as a starting point." During the thinking period, they viewed an otherwise blank screen with the words, "Please think about the topics you listed earlier." The results in these different versions of the control condition were nearly identical so we collapsed across them in the analyses. Study 4 used the second version of the control condition just described.

To make sure that they understood the instructions, participants in all studies were given multiple choice comprehension check questions prior to beginning the thinking period. If participants answered a comprehension check question incorrectly, they were reminded of the correct instructions.[4]

Study 5: Index cards. Instead of entering their thought topics into the computer, participants wrote them on 3 × 5-in. index cards (one per topic; 8 total). Participants read, "You can write as much or as little as you like, as long as it fits on the front side of the card." When they were done, participants were instructed to put the cards and pen into a box and then to answer some questionnaires. The purpose of these questionnaires was to introduce a delay between the time participants listed their thought topics and engaged in the thinking period, to allow some time for their memory for the topics to fade.[5] These included questions about what psychology courses they were taking, their mood, demographic information, their frequency of use of mobile phones and social media, and their experience with meditation. Participants then completed a Stroop task that included five practice trials and 50 actual trials. This was an exploratory measure to see if working memory, as assessed by the Stroop, predicted enjoyment of the thinking period (Stroop, 1935). Participants then received further instructions about the thinking period, which, they learned, would be completed while sitting on another chair that faced a blank wall out of view of the computer. They were reminded that they should spend the time entertaining themselves with their thoughts and that their goal should be "to have a pleasant experience, as opposed to spending the time focusing on everyday activities or negative things." They were asked to think about the topics they had listed earlier for as long or short as they liked.

Participants were randomly assigned to the topic reminder or control condition, with the only difference being whether participants had the index cards with them during the thinking period. Those in the topic reminder condition were instructed to take the cards out of the box and take them with them to the other chair and to consult the cards during the thinking period. Participants in the control condition were instructed to leave the cards in the box. Participants in both conditions then moved to the other chair for the 6-min thinking period, at the end of which they heard a sound on the computer, signaling them to return to their previous seat and complete the dependent measures on the computer.

Dependent measures. Participants rated how enjoyable, entertaining, and boring the thinking period was on 9-point Likert scales that ranged from 1 (*not at all* [enjoyable, entertaining, boring]), 5 (*somewhat* [enjoyable, entertaining, boring]), and 9 (*extremely* [enjoyable, entertaining, boring]). To test whether the topic reminder reduced the cognitive load of the thinking task, we asked participants the extent to which they experienced mind-wandering during the thinking period, how hard it had been to concentrate on what they chose to think about (both on 9-point Likert scales that ranged from 1 = *not at all*, 5 = *somewhat*, and 9 = *very much*), and the extent to which they thought about the eight topics listed at the beginning of the study versus other topics (1 = *only about other topics*, 9 = *only about the 8 topics*). We did not expect the topic reminder to influence participants' goal to have pleasurable thoughts; to test this we asked them the extent to which their goal had been to make plans for what they would do later on versus to think about things that were pleasant or entertaining (both rated on scales where 1 = *not at all* and 9 = *very much*). Nor did we expect the topic reminder to influence the manner in which participants chose to think. To assess this we asked participants the extent to which they let their thoughts flow in whatever direction they happened to go and how much they were deliberately trying to control the direction their thoughts went, both on 9-point Likert scales that ranged from 1 (*not at all*) to 9 (*very much*). Participants then described what they had thought about during the thinking period. We also included several exploratory measures of participants' experience that varied from

[4] There was a third condition in Study 2 that was identical to the topic reminder condition, except that the topics were displayed in a random order. Due to a programming error, however, the thinking period was longer in this condition than the other two. The results were thus uninterpretable.

[5] In an initial version of this study there was no delay between the time participants listed their topics and engaged in the thinking period. As predicted, participants in the topic reminder condition enjoyed the thinking period more than did participants in the control condition, but the difference was not significant. Participants wrote more on the cards than they did on the computer in previous studies, $t(1071) = 4.68$, $p < .001$, and as a result, the topics were probably still accessible in memory even to those who did not have the cards in front of them during the thinking period. Thus, in the present study, we introduced a delay, such that the accessibility of the topics would be reduced. This initial version is included in a meta-analysis of all studies reported in the Results section.

study to study. Because little of interest was found on these measures we report them in the supplementary materials.

Results and Discussion

All participants succeeded in listing eight topics to think about. Many wrote a few words for each topic, such as, "My wedding day," "my family," and "the upcoming summer." Others wrote more detailed descriptions, such as, "Having fun on Valentine's Day with my boyfriend and getting gifts and hugs from him," "Eating my mom's birthday cake at home," and, "What my life would be like if I were living in Azeroth (World of Warcraft)."

Did the topic reminder manipulation increase how much participants enjoyed thinking? To find out, we averaged participants' ratings of how enjoyable, entertaining, and boring (reversed scored) the thinking period had been (alphas = .92, .87, .89, and .90 in Studies 2–5, respectively). As predicted, the simple "thinking aid" of seeing one's thoughts displayed on the screen (in Studies 2–4) or on index cards (in Study 5) increased how much participants enjoyed thinking (means are shown in Table 4). The difference was significant in Studies 2 and 3, $t(142) = 2.22$, $p = .028$, $d = .37$ [.04, .70] and $t(349) = 2.36$, $p = .019$, $d = .26$ [.04, .48], and marginally significant in Study 4, $t(464) = 1.69$, $p = .092$, $d = .16$ [−.03, .34], and Study 5, $t(108) = 1.94$, $p = .055$, $d = 0.37$ [−.01, .75].

There was considerable variation in how much time participants spent generating their topics (*M*s = 190 s, 177 s, and 194 s in Studies 2–4, respectively, *SD*s = 80.4, 168.9, 144.9; we did not measure time in Study 5). We reanalyzed the data after eliminating participants who took less than 60 s to generate topics (i.e., under 8 s per topic), in order to exclude those who exerted little effort on the task. These analyses yielded significant effects of the topic reminders, *t*s(138, 334, 455) = 2.02, 2.97, 2.06, *p*s = .043, .003, and .039, in Studies 2–4, respectively. As may be inferred from the degrees of freedom, these analyses dropped 4, 15, and 9 participants from the three studies.

The effects of the topic reminders on enjoyment were modest and only marginally significant in two of the four studies. There is little doubt, however, that the effect is reliable. We conducted an internal meta-analysis of the effect of the topic reminder on enjoyment that included all the studies we have conducted testing the effects of the topic reminder manipulation. This included not only Studies 2–5, but also the additional study mentioned in Footnote 5 and a pilot study in which we first tested the procedure with 40 participants. Using the method of adding *z*s weighted for degrees of freedom of individual studies, the result was highly significant, $z = 3.72$, $p = .0002$ (Rosenthal, 1978), corresponding to a meta-analytic effect size of Cohen's $d = .21$ (95% CI [.10, .32]). The variation in results between studies was not significant, $\chi^2(5) = 1.20$, *ns*. Thus, whereas the magnitude of the effect of the thinking aid on enjoyment was modest, it is highly reliable and consistent.

Why did the topic reminders increase enjoyment of thinking? As predicted, they appear to have reduced the cognitive demands of thinking for pleasure: participants in the topic reminder conditions reported that it was easier to concentrate on their thoughts, that their minds wandered less, and that they thought more about the topics than did participants in the control conditions (see Table 4). Further, as shown in Table 5, each of these variables significantly mediated the effects of the manipulation on thought enjoyment, as calculated with bootstrapping procedures using 10,000 samples (Hayes, 2013). (These analyses were conducted on the data collapsed across Studies 2–5, given that there was little variation in the results of the individual studies; see the supplemental materials for mediation analyses of each individual study.)

Did the topic reminders influence other aspects of the thinking task, in addition to reducing its cognitive demands? For example, did it increase participants' motivation to have pleasurable thoughts? As seen in Table 4, there is no evidence that it did: participants in both conditions reported that their goal was to have pleasant thoughts, much more than it was to make plans. Nor did the topic reminders have consistent effects on the extent to which participants let their thoughts flow or tried to control their thoughts. And, as seen in Table 5, none of these additional measures significantly mediated the effects of the topic reminders on enjoyment. Thus, as predicted, providing participants with a simple thinking aid (topic reminders) increased their enjoyment of thinking by making the task easier, and not by altering their motivation to perform the task.

The results of Studies 2–5 confirmed our hypothesis that reducing the cognitive load of the thinking task made it more enjoyable. The exact mechanisms by which it did so are not entirely clear; for example, the topic reminders might have made it easier for participants to recall their topics, easier to decide which one to think

Table 4
Effects of the Topic Reminder Manipulation, Studies 2–5

	Study 2		Study 3		Study 4		Study 5	
Dependent measure	Control (n = 73)	Topic reminder (n = 71)	Control (n = 226)	Topic reminder (n = 125)	Control (n = 233)	Topic reminder (n = 233)	Control (n = 57)	Topic reminder (n = 53)
Enjoyment	5.22^{A} (1.97)	5.90^{B} (1.69)	5.97^{A} (1.83)	6.44^{B} (1.75)	6.12^{a} (1.90)	6.42^{b} (1.91)	5.85^{a} (1.52)	6.40^{b} (1.55)
Difficulty concentrating	5.18^{A} (2.28)	3.58^{B} (1.83)	4.76^{A} (2.30)	4.09^{B} (2.38)	4.46^{A} (2.32)	3.55^{B} (2.17)	4.72^{A} (1.80)	3.89^{B} (1.91)
Mind-wandering	5.93^{A} (2.22)	4.51^{B} (2.03)	5.64^{A} (2.24)	4.68^{B} (2.30)	5.22^{A} (2.32)	4.11^{B} (2.21)	5.54 (1.99)	5.13 (1.93)
Thought about topics	5.95^{A} (1.72)	7.01^{B} (1.36)	6.47^{A} (1.69)	7.01^{B} (1.73)	6.68^{A} (1.78)	7.18^{B} (1.74)	6.35 (2.00)	6.72 (2.00)
Goal: pleasant thoughts	6.93 (1.82)	7.07 (1.53)	7.61^{A} (1.59)	7.09^{B} (1.85)	7.48 (1.77)	7.68 (1.43)	7.02 (1.46)	7.00 (1.68)
Goal: make plans	3.88 (2.43)	4.14 (2.66)	2.89^{A} (2.33)	3.98^{B} (2.45)	3.02^{A} (2.36)	3.66^{B} (2.56)	4.32 (2.59)	3.96 (2.54)
Flow	5.96 (1.93)	5.51 (1.93)	5.52^{a} (2.07)	5.94^{b} (2.04)	5.34 (2.25)	5.40 (2.23)	4.63^{A} (1.59)	5.49^{B} (1.86)
Controlled thoughts	5.05 (1.96)	4.93 (1.90)	5.43^{a} (2.16)	4.96^{b} (2.26)	5.65 (2.28)	5.48 (2.35)	5.86^{A} (1.59)	5.08^{B} (1.96)

Note. Standard deviations are in parentheses. Means with different superscripts in capital letters differ at $p < .05$ within a study. Means with different superscripts in lower case letters differ at $p < .10$ within a study.

Table 5
Mediators of the Effect of Condition on Enjoyment of the Thinking Period

Mediator	Studies 2–5			
	a	*b*	*ab*	95% CI
Difficulty concentrating	−.96***	−.40***	**.38**	**.27, .50**
Mind wandering	−1.08***	−.32***	**.34**	**.24, .46**
Thought about topics	.58***	.34***	**.20**	**.12, .29**
Goal: make plans	.64***	−.05*	−.03	−.08, −.004
Goal: think pleasant thoughts	−.05	.35***	−.02	−.09, .05
Tried to control thoughts	−.29*	−.01	.002	−.01, .02
Flow	.15	.02	.003	−.004, .03

Note. Condition is coded as 0 = Control, 1 = Topic reminder. *a* = the beta weight of condition regressed on the mediator; *b* = the beta weight of the mediator regressed on enjoyment of the thinking period, controlling for condition; *ab* = the indirect effect. The results that are bolded in the far right column represent significant mediation, because the 95% confidence intervals do not include zero.
* $p < .05$. ** $p < .01$. *** $p < .001$.

about, or both. The mediation analyses just reported, however, support the general hypothesis that the topic reminders increased enjoyment by making it easier for participants to concentrate on their thoughts, reducing mind wandering, and increasing the extent to which they thought about the topics.

In one sense it is not very surprising that having a list of topics at hand made it easier for participants to enjoy their thoughts. It is worth noting, however, just how minimal this manipulation was. All participants generated topics that they expected to enjoy thinking about and all participants were then asked to think about those topics. The only difference between the conditions was that some participants were reminded of their topics during the thinking period. The fact that this simple reminder made intentional thought easier and more enjoyable is a testament to how difficult it is for people to think for pleasure when left to their own devices.

General Discussion

At any given moment, people have a choice: they can pay attention to the external world around them or withdraw into the internal world of their thoughts. Intentional conscious thought undoubtedly has many benefits, such as allowing people to plan, solve problems, and avoid acting too hastily. Our focus was on a possible use of conscious thought that has not received much attention: to have a pleasurable experience. The results showed that pleasant thoughts that occurred intentionally were less enjoyable than those that occurred unintentionally (Study 1), and that although thinking for pleasure is effortful and not particularly enjoyable, people can and do enjoy it more when given a simple "thinking aid" (Studies 2–5).

The experimental evidence from Studies 2–5 supports our interpretation of Study 1, namely, that intentional desirable thoughts were less enjoyable because they entailed more cognitive effort. This interpretation does not rule out the possibility, however, that other factors contributed to the correlational relationship between intentionality and thought enjoyment obtained in Study 1. For instance, people in more extreme affective states may have less control over their thoughts, and thus experience more unintended thoughts. Conversely, topics or memories that are particularly positive (or negative) may be more likely to break through into consciousness and thus be overrepresented among unintentionally occurring thoughts. Such factors may contribute to spontaneity intensification beyond the increased cognitive effort entailed by intentional thought.

The fact that participants in Studies 2–5 did not enjoy their thoughts very much, in the absence of a thinking aid, may seem surprising in light of research on the default mode network, which has found that people generally enjoy the resting default state and find it pleasurable (Mason et al., 2007). One clear difference between the mind wandering that characterizes the default mode versus the thinking for pleasure explored here is the role of intentionality and cognitive effort. It is possible that the pleasure felt in the default mode is analogous to the *unintended* desirable thoughts experienced by participants in our experience sampling study, whereas thinking for pleasure is more analogous to *intended* desirable internal thoughts, which were, on average, less enjoyable. If so, one reason why people may typically enjoy the default mode may specifically be the lack of task focus (and correspondingly lower cognitive demands) entailed by that state.

One might question the value of thinking for pleasure, given that participants enjoy engaging in mundane activities substantially more (Buttrick et al., 2016; Wilson et al., 2014). That is, if the goal is enjoyment, people would be better off watching a movie or reading a book than relying solely on their own thoughts. If this is the case, then why is it important to show that people enjoy intentional thought a little more with a thinking aid? One answer is that in this technology-driven world, improving the attractiveness of alternatives to "device obsession" may be of some benefit (Powers, 2010; Wayne, 2016). Another is that people are often in situations in which it is easier to "just think" than to find an enjoyable external activity, such as when stuck in a traffic jam, trying to fall asleep at night, or sitting in a boring lecture. People always have their own minds at their disposal and it would be a useful tool to be able to deliberately generate enjoyable thoughts. Indeed, one study found that insomniacs got to sleep more quickly when instructed to think about interesting and engaging topics while trying to fall asleep (Harvey & Payne, 2002). Another study found that people reported less pain and kept their hands submerged in ice-cold water longer when told to think about food, spiritual, or romantic topics, compared with neutral topics or no fantasies at all (Hekmat, Staats, & Staats, 2008).

It may also be the case that pleasure is not the only benefit of intentional enjoyable thought. That is, even if people enjoy mundane external activities more than intentional thought, are there benefits to this kind of thinking that cannot be achieved through such activities as watching TV or playing a video game? Many mundane external activities, such as browsing Facebook, are enjoyable in the short-term but detrimental to long-term happiness (Kross et al., 2013). In contrast, participants report that thinking for pleasure is a worthwhile and meaningful activity (Alahmadi et al., 2016). Future research should explore whether it has other benefits, such as building cognitive resources and mental flexibility. Positive fantasies about the future may also expand people's sense of possibility and help them achieve their goals, particularly when they contrast their desired goals with their current reality and think about how to achieve those goals (Oettingen, 2012). Thinking for pleasure may likewise help people cope with stressful or boring situations and aid performance on monotonous tasks (East-

wood, Frischen, Fenske, & Smilek, 2012). Similarly, mind wandering has been linked to creative breakthroughs (Baird et al., 2012), and internal thought has been identified as an important source of creative ideas (Zedelius & Schooler, 2015). Making it easier and more enjoyable to think for pleasure may make engaging in such thought more appealing, with potential corresponding payoffs in creativity.

The present studies also inform the debate about the function of conscious thought. Some scholars argue that conscious thoughts are an emergent (but ultimately unimportant) byproduct of unconscious processes, whereas others argue that they serve important functions (e.g., Bargh, 1997; Dijksterhuis & Nordgren, 2006; Flanagan, 1992; Pockett, 2004; Wegner, 2002; Wilson, 2002). Surprisingly, the possibility that conscious thought serves an affective function has been largely overlooked—perhaps because thinking for pleasure is both difficult and uncommon. But that doesn't mean it cannot be done, and the present studies suggest a way of making it easier. If thinking for pleasure is a skill that requires motivation and ability, then it might also improve with practice. During his time at Walden Pond, for example, Henry David Thoreau noted that he was often "rapt in a revery," and he recommended that people not only explore the external world, but "be a Columbus to whole new continents and worlds within you, opening new channels, not of trade, but of thought" (Thoreau, 1854/2009, pp. 55, 158).

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