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What did you have in mind? Examining the content of intentional and unintentional types of mind wandering

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ABSTRACT

It has recently been argued that researchers should distinguish between mind wandering (MW) that is engaged with and without intention. Supporting this argument, studies have found that intentional and unintentional MW have behavioral/neural differences, and that they are differentially associated with certain variables of theoretical interest. Although there have been considerable inroads made into the distinction between intentional/unintentional MW, possible differences in their content remain unexplored. To determine whether these two types of MW differ in content, we had participants complete a task during which they categorized their MW as intentional or unintentional, and then provided responses to questions about the content of their MW. Results indicated that intentional MW was more frequently rated as being future-oriented and less vague than unintentional MW. These findings shed light on the nature of intentional and unintentional MW and provide support for the argument that researchers should distinguish between intentional and unintentional types.

1. Introduction

As investigations of the common experience of mind wandering have progressed, research has begun to move beyond the traditional practice of dichotomously categorizing people's thoughts as reflecting a state of "on-task" focus or "mind wandering," and has focused on more specific distinctions regarding the mind-wandering experience. One important distinction that has emerged from this work is the distinction between intentional and unintentional mind wandering. Specifically, research has shown that mind wandering can occur *unintentionally*, despite people's best intentions to refrain from engaging in such cognitive activity, and that it can occur *intentionally*, with deliberation, or the wilful allowance of its occurrence (e.g., Seli, Risko, & Smilek, 2016). This distinction has been important because, as has been recently shown, the behavioral (see Seli, Risko, Smilek, & Schacter, 2016, for a review) and neural (Golchert et al., 2017) associates of intentional and unintentional mind wandering can be quite different. For instance, whereas unintentional mind wandering is uniquely *positively* associated with one's propensity to be reactive to his/her inner experiences (an aspect of mindfulness), intentional mind wandering is uniquely *negatively* associated with this same variable (Seli, Carriere, & Smilek, 2015). Here, we extend prior work that has distinguished intentional and unintentional mind wandering by considering whether and how these two types of mind wandering differ in terms of their content.

In addition to examining potential differences in intentional and unintentional mind wandering, our investigation builds on

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research examining the content of general mind-wandering episodes, which has explored various aspects of bouts of mind wandering (although notably without distinguishing between intentional and unintentional types), such as its temporal focus (e.g., Baird, Smallwood, & Schooler, 2011), self-relatedness (Baird et al., 2011), emotional valence, level of specificity, and the extent to which it is comprised of images versus words (Gorgolewski et al., 2014; Medea et al., 2016; Ruby, Smallwood, Engen, & Singer, 2013a; Ruby, Smallwood, Sackur, & Singer, 2013b; Smallwood et al., 2016; Stawarczyk, Majerus, Maquet, & D'Argembeau, 2011). This work is important because many researchers have been interested in examining the consequences of mind wandering (see Mooneyham & Schooler, 2013, for a review), and it is reasonable to assume that such consequences might differ as a function of the content of one's mind wandering (Smallwood & Andrews-Hanna, 2013). Consistent with this supposition, research exploring the content of mind-wandering episodes has indicated that the content of such episodes does indeed play an important role in predicting certain outcomes. For instance, it has now been well-established that mind wandering that is focused on the past (compared with mind wandering that is focused on the present or the future) tends to be associated with decreases in happiness (Poerio, Totterdell, & Miles, 2013; Ruby, Smallwood, Engen, et al., 2013; Smallwood & O'Connor, 2011). In other work, it has been shown that more perseverative or ruminative types of mind wandering tend be associated with pathological states such as depression and anxiety (Ottaviani & Couyoumdjian, 2013). Moreover, research has found that bouts of mind wandering that are characterized as "negative" are associated with poorer working memory and sustained-attention performance compared with bouts of mind wandering that are characterized as "neutral" or "positive" (Banks, Welhaf, Hood, Boals, & Tartar, 2016). Although the foregoing research has played an important role in informing our understanding of the consequences of mind wandering in general, to date, research has not examined the potential differences in the content of intentional and unintentional types of mind wandering. However, such differences, if present, could provide a more nuanced picture of the wandering mind.

In the present study, to examine the possibility that intentional and unintentional mind wandering differ in terms of content, we had participants complete a sustained-attention task (the Choice Reaction Time task; CRT; Smallwood, Nind, & O'Connor, 2009) during which we asked them to (a) categorize their mind wandering as being intentional or unintentional, and (b) provide responses to nine questions (e.g., Karapanagiotidis, Bernhardt, Jefferies, & Smallwood, 2016; Medea et al., 2016; Smallwood et al., 2016) pertaining to the content of their intentional and unintentional mind-wandering episodes (see Table 1). We then examined the within-participant ratings given to each of these content questions as a function of intentional and unintentional mind wandering. As our study was exploratory, we did not have any specific hypotheses with respect to the potential differences in content across intentional and unintentional mind wandering. However, we think that specific hypotheses are not critical to this study because we simply sought to explore the possibility that the content of intentional and unintentional mind wandering differ in some respects, and that such differences (if observed) would potentially inform theoretical accounts of mind wandering. For the sake of completeness, we also included an analysis of the relation between CRT performance and intentional/unintentional mind wandering.

2. Materials and method

We report how we determined our sample size, all data exclusions (if any), and all measures in the experiment (Simmons, Nelson, & Simonsohn, 2012).

2.1. Participants

One hundred fifty undergraduate students from the University of Waterloo participated for partial course credit. It was determined in advance that we would collect data from as many participants as possible before the end of the academic term. In accordance with Smallwood, Brown, et al. (2011), data from four participants were removed from all subsequent analyses because these participants' accuracy rates were below 50% on the CRT (Smallwood, Brown, et al., 2011). Hence, data from 146 participants were analyzed.

2.2. Choice Reaction Time task (CRT)

The CRT (Konishi, McLaren, Engen, & Smallwood, 2015; see Fig. 1) was programmed using PsychoPy2 (Peirce, 2007). On each

Table 1
Probe items assessing the content of periods of intentional and unintentional mind wandering.

Content	Item	Response scale (0–100)
Future orientation	My thoughts involved future events.	Not at all - Completely
Past orientation	My thoughts involved past events.	Not at all - Completely
Self-referential	My thoughts involved myself	Not at all - Completely
Other-referential	My thoughts involved other people	Not at all - Completely
Valence	The content of my thought was:	Negative - Positive
Images	My thoughts were in the form of images	Not at all - Completely
Words	My thoughts were in the form of words	Not at all - Completely
Intrusiveness	My thoughts were intrusive	Not at all - Completely
Vagueness	My thoughts vague and non-specific	Not at all - Completely

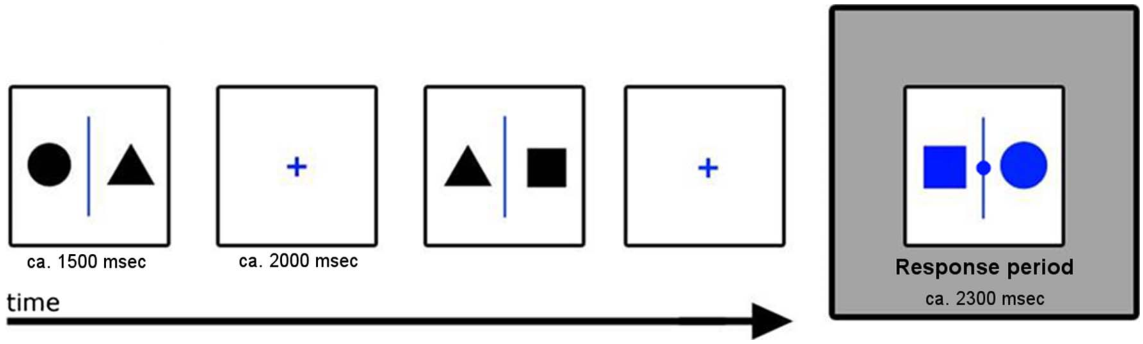

Fig. 1. A visual depiction of the sequence of events in the Choice Reaction Time task (CRT). On each non-target (NT) trial, participants observed a series of black shapes while awaiting the presentation of a target trial portraying coloured shapes (i.e., the "response period"). On each target trial, participants were to indicate (via a button press) whether the target item, which was presented in the center of the screen, was presented on the left or the right side of the screen. In the example provided here, because the target item was a circle, a correct response would entail indicating that the circle was presented on the right side of the screen.

non-target (NT) trial, participants saw pairs of black, NT shapes, and a vertical line divided these shapes (See Fig. 1). Possible shape pairings included a circle and a square, a circle and a triangle, or a square and a triangle, for a total of six possible pairs (two different left/right configurations for each). The pairs never consisted of shapes of the same kind (e.g. a square and a square). Each block of NT trials was followed by a response event, which was either a thought probe (see below) or a target trial. The target was a small stimulus presented in the center of the screen, in blue. On target trials, two shapes flanked the target and participants were required to indicate, via button press, whether the target shape was presented on the left (left-arrow key) or the right (right-arrow key) side of the screen. The number of NT trials preceding a response event varied in a semi-random fashion from a minimum of 1 to a maximum of 6 (the distribution was based on a bell-shaped curve) in order to reduce anticipation effects. The number of response events varied randomly from 60 to 80. Total duration of the task in our sample ranged from 19 to 26 min (M = 22 min).

In first study that employed the CRT (Konishi et al., 2015), the presentation rate of the stimuli was jittered in order to maximise experimental design efficiency (it was an fMRI study) and reduce anticipation effects. To maintain consistency with Konishi et al. (2015), and to reduce anticipation effects, we likewise jittered the presentation rate of stimuli in the present study. In particular, the duration of fixation crosses ranged from 1.8 to 2.2 s (average 2 s) in steps of 0.05 s. Non-target duration varied from 1.3–1.7 s (average 1.5 s) in steps of 0.05 s. Target duration ranged from 2.1 to 2.5 s (average 2.3 s) in steps of 0.05 s, and lasted for the full duration, regardless of whether participants produced a response.

2.3. Thought probes

We used a probe-caught experience-sampling method to sample participants' mental experiences throughout the task (Kahneman, Krueger, Schkade, Schwarz, & Stone, 2004; Smallwood & Schooler, 2006). The task was created such that, for each target event, there was a 20% chance that a thought probe would be presented in the place of a target trial, which was done to ensure that participants could not readily predict the occurrence of a probe. In our sample, the number of probes per participant ranged from 8 to 22 (M = 13). When a probe was presented, the task stopped and the participant was presented with the following question: "Which of the following responses best characterizes your mental state just prior to the presentation of this screen?" The possible response options were: (1) On task, (2) Intentionally mind wandering (3) Unintentionally mind wandering (for detailed probe instructions, see Seli, Risko, & Smilek, 2016). Participants were instructed to respond with one of these three options via key press (1–3). After providing a response to this initial thought probe, participants were presented with nine questions that asked about the content of the thoughts that they had just prior to the presentation of the thought probe (see Table 1). These content questions were presented to participants irrespective of whether they reported that they were on task or mind wandering (intentionally or unintentionally) to the initial thought probe. This was done to (a) maintain consistency with previous research (Karapanagiotidis et al., 2016; Medea et al., 2016; Smallwood et al., 2016), and (b) eliminate the potential for response bias (i.e., if participants were not presented with the content items following an "on task" response, they may have been biased to select this response to expedite the task, even if they were not in fact on task). In the present study, we were only interested in examining content-item responses to intentional and unintentional mind wandering.

2.4. Measures

CRT performance measures included the percentage of accurate responses to target trials, as well as response times (RTs; in ms) on these target trials. In addition, mind-wandering rates for intentional and unintentional mind wandering were calculated for each participant as the percentage of thought probes to which the participant reported each type of mind-wandering. Finally, for each type of mind wandering (intentional and unintentional), we computed the average response for each of the content-question responses.

Table 2
Comparisons of content ratings across reports of intentional and unintentional mind wandering using data only from participants contributing responses to each of the two mind-wandering cells (N = 116, df = 115).

	Mind-wandering type	*M*	*SD*	*t*	*p*
Content					
Future Orientation	Intentional	53.66	25.10	3.097	0.002*
	Unintentional	45.20	22.45		
Past Orientation	Intentional	35.04	22.21	−0.767	0.444
	Unintentional	36.74	22.40		
Self-Referential	Intentional	61.16	23.58	1.595	0.114
	Unintentional	57.19	22.34		
Other-Referential	Intentional	49.82	25.78	0.575	0.566
	Unintentional	48.48	22.89		
Valence	Intentional	59.44	19.54	2.165	0.032
	Unintentional	56.00	17.87		
Images	Intentional	49.79	23.14	−0.044	0.965
	Unintentional	49.90	22.64		
Words	Intentional	53.11	27.41	2.247	0.027
	Unintentional	47.84	24.28		
Intrusiveness	Intentional	45.04	21.81	1.299	0.196
	Unintentional	42.65	21.40		
Vagueness	Intentional	37.64	21.08	−5.067	< 0.001*
	Unintentional	48.96	21.94		

For detailed explanations of each content item, see Table 1
* $p < 0.006$, 2-tailed.

3. Results

First, we sought to determine whether the content of intentional and unintentional mind wandering differed. To explore this possibility, we conducted nine paired-samples *t* tests to compare each of the nine content ratings (Table 1) for reports of intentional and unintentional mind wandering. Given the purely exploratory nature of this study, we used a Bonferroni correction to counteract the problem of multiple comparisons when examining these content ratings. Because we made nine comparisons, the family-wise error rate was adjusted from $p = 0.05$ to $p = 0.006$ (i.e., 0.05/9).

Notably, some participants did not report at least one instance of intentional and/or unintentional mind wandering, and hence, data from these participants could not be included in our within-subject analyses. Given this feature of our data, we decided to analyze the data in two different ways, each of which has its own advantages (as in Seli, Carriere, Thomson, Cheyne, Martens, & Smilek, 2014). The first method involved restricting our analyses such that they included only those participants who had data in each of the two mind-wandering cells (intentional, unintentional; $N = 116$); this analysis has the advantage of using only observed data. The second method used linear trend point estimation to impute missing data; this analysis has the advantage of allowing us to use the full sample ($N = 146$).

We report the results of the first method of analysis (which only included data from participants contributing responses to the two mind-wandering cells) in Table 2. Across the nine different content questions, we found that intentional mind wandering was associated with significantly higher reports of future-oriented thinking and significantly lower reports of vagueness. None of the other comparisons were significant (all $ps > 0.006$).

Also of interest was whether, in accordance with previous research (e.g., Baird et al., 2011), people's mind wandering (both intentional and unintentional types) tended to be more future-oriented than past-oriented. To examine this possibility, we conducted a 2 (temporal orientation: future, past) by 2 (mind-wandering type: intentional mind wandering, unintentional mind wandering) repeated-measures ANOVA. This analysis revealed a significant main effect of temporal orientation, $F(1,115) = 37.61$, $MSE = 0.057$, $p < 0.001$, $\eta_p^2 = 0.246$, indicating that, when collapsing across intentional and unintentional mind wandering, people tended to report higher rates of future-oriented mind wandering than past-oriented mind wandering. Most critically, this analysis also revealed a significant temporal orientation × mind-wandering type interaction, $F(1,115) = 7.575$, $MSE = 0.039$, $p = 0.007$, $\eta_p^2 = 0.062$, indicating that intentional mind wandering was more future-oriented than past-oriented compared with unintentional mind wandering (see Fig. 2).

The results of the second method of analysis (which used imputed data for empty cells) are reported in Table 3. Here we found the same general pattern of results yielded by the foregoing analysis: Intentional mind wandering was again found to be associated with significantly higher reports of future-oriented thinking, significantly lower reports of vagueness, and moreover, intentional and unintentional mind wandering did not significantly differ across the other content items (all $ps > 0.006$). In addition, it is worth highlighting the fact that we observed a marginal difference in terms of the extent to which intentional and unintentional mind wandering were in the form of words (a finding that was also marginal in the previous analysis; see Table 2): Participants reported a marginally higher usage of words during intentional mind wandering compared with unintentional mind wandering across both methods of analysis.

To determine whether people's mind wandering (both intentional and unintentional types) tended to be more future-oriented

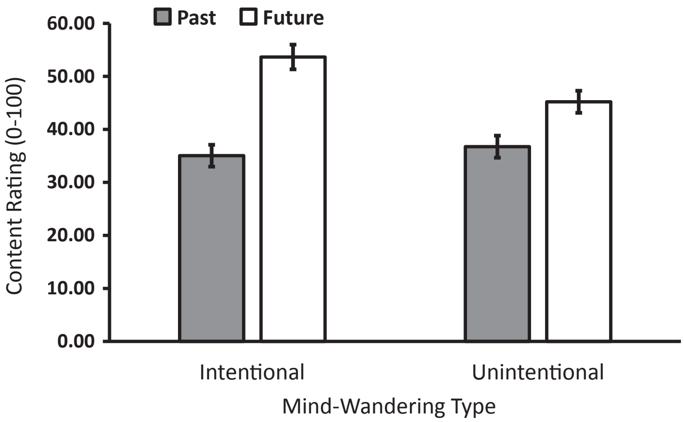

Fig. 2. Content-rating responses as a function of mind-wandering type (intentional and unintentional), presented separately for past- and future-orientation. Error bars are ± 1 *SEM*.

than past-oriented, we conducted a 2 (temporal orientation: future, past) by 2 (mind-wandering type: intentional mind wandering, unintentional mind wandering) repeated-measures ANOVA. As we found when restricting our analysis only to data from participants who contributed data to each cell, here, when imputing data for missing cells, we found a significant main effect of temporal orientation, $F(1,145) = 50.17$, $MSE = 0.049$, $p < 0.001$, $\eta_p^2 = 0.257$, indicating that, when collapsing across intentional and unintentional mind wandering, people tended to report higher rates of future-oriented mind wandering than past-oriented mind wandering. Most critically, this analysis likewise revealed a significant temporal orientation × mind-wandering type interaction, $F(1,145) = 12.07$, $MSE = 0.035$, $p = 0.001$, $\eta_p^2 = 0.077$, indicating that the intentional mind wandering was more future-oriented than past-oriented compared with unintentional mind wandering (see Fig. 3).

For the sake of completeness, here we present the descriptive statistics for CRT performance measures. On average, participants took 850.34 ms ($SD = 161.96$) to respond to target trials and they provided correct responses to 97.46% ($SD = 5.81$) of these trials. With respect to rates of mind wandering, participants reported intentional mind wandering to 22.64% ($SD = 18.69$) of the thought probes and unintentional mind wandering to 32.88% ($SD = 20.12$) of the probes.

Next, we examined the Pearson product-moment correlation coefficients for CRT performance measures and rates of mind wandering. As can be seen in Table 4, CRT RT and CRT accuracy were significantly negatively correlated, as reported in previous research (e.g., Wickelgren, 1977; Wood & Jennings, 1976). Moreover, whereas intentional mind wandering was significantly positively correlated with CRT RT, no such association was observed with unintentional mind wandering. Finally, in examining CRT accuracy, we found no significant relations with intentional or unintentional mind wandering. Although mind wandering is typically associated with performance decrements across numerous tasks (see Mooneyham & Schooler, 2013, for a review), in the present case, this lack of a relation between mind wandering and performance is perhaps unsurprising given that accurate responding on the CRT

Table 3
Comparisons of content ratings across reports of intentional and unintentional mind wandering using imputed data for empty cells (N = 146, df = 145).

	Mind-wandering type	*M*	*SD*	*t*	*p*
Content					
Future Orientation	Intentional	53.45	22.59	4.137	< 0.001*
	Unintentional	43.83	22.20		
Past Orientation	Intentional	35.16	20.17	−0.596	0.552
	Unintentional	36.28	21.27		
Self-Referential	Intentional	60.65	20.95	2.213	0.028
	Unintentional	55.93	21.80		
Other-Referential	Intentional	49.36	23.23	0.305	0.761
	Unintentional	48.76	21.63		
Valence	Intentional	59.72	17.67	1.423	0.157
	Unintentional	57.73	17.26		
Images	Intentional	49.88	20.76	−0.308	0.758
	Unintentional	50.50	21.94		
Words	Intentional	53.37	24.58	2.738	0.007
	Unintentional	47.67	24.17		
Intrusiveness	Intentional	44.43	19.88	1.003	0.317
	Unintentional	42.77	20.83		
Vagueness	Intentional	37.41	18.91	−5.194	< 0.001*
	Unintentional	47.47	21.51		

For detailed explanations of each content item, see Table 1.
* $p < 0.006$, 2-tailed.

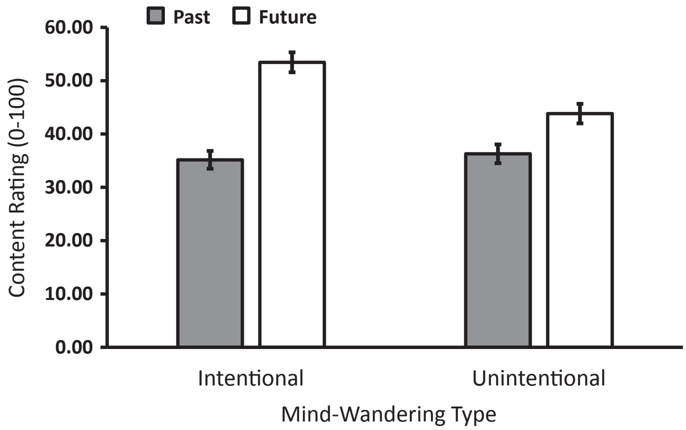

Fig. 3. Content-rating responses as a function of mind-wandering type (intentional and unintentional), presented separately for past- and future-orientation. Error bars are ± 1 *SEM*.

only required that participants were attentive upon presentation of the salient (i.e., blue), attention-capturing target.

Lastly, expanding upon previous research showing that participants report more mind wandering as time on task increases (e.g., McVay & Kane, 2012; Thomson, Seli, Besner, & Smilek, 2014; Unsworth & Robison, 2016), we sought to determine whether mind-wandering rates and type varied with time on task during the CRT. To do this, we used linear mixed models as implemented in R through the package *lme4*. We ran a model predicting time on task, with report type (on task, intentional mind wandering, unintentional mind wandering) as a fixed-effect predictor and participant as a random effect; we then compared this model to a null model (without task-focus type as a predictor) with a likelihood ratio test. This analysis revealed a significant relation of task focus type and time on task, $\chi^2(2) = 21.12$, $p < 0.0001$. As anticipated on the basis of previous research (e.g., McVay & Kane, 2012; Thomson et al., 2014), on-task reports were more frequent in the early stages of the CRT. We also found that reports of intentional mind wandering were more frequent towards the end of the sessions, whereas reports of unintentional mind wandering were more frequent in the intermediate stages of the CRT (see Fig. 4).

4. Discussion

In the present study, we explored the possibility that intentional and unintentional mind wandering differ in terms of their content. Critically, we found that they did indeed differ in certain respects: bouts of intentional mind wandering were more likely to be future-oriented and less likely to be vague/non-specific compared with bouts of unintentional mind wandering. In addition, we observed a marginal difference between intentional and unintentional mind wandering in terms of the extent to which they were in the form of words: Intentional mind wandering was associated with marginally higher reports on this content question.

One well-documented finding in the literature on mind wandering is that this cognitive state is primarily future-oriented (e.g., Baird et al., 2011). Consistent with this finding, here we found that both intentional and unintentional mind wandering were rated as being more future-oriented than past-oriented. Extending this work, the present results add nuance to the literature by demonstrating that intentional episodes of mind wandering tend to be more future-oriented than unintentional episodes, while at the same time showing that these two types of mind wandering do not differ in terms of the extent to which they are past-oriented. Importantly, the finding that intentional mind wandering is largely future-oriented suggests that it will be important for research examining the temporal focus of mind wandering to distinguish between intentional and unintentional types. Indeed, it may be the case that the type of future-oriented thought that is engaged when mind wandering with intention may be different from the type of future-oriented thought that is engaged when mind wandering without intention. For example, whereas future-oriented intentional mind wandering might be strongly associated with planning, future-oriented unintentional mind wandering might be more strongly associated with a propensity to worry about potential future outcomes. Of course, research will have to investigate such possibilities.

In addition to finding that intentional mind wandering is more likely to be future-oriented than unintentional mind wandering,

Table 4
Pearson product-moment correlation coefficients of all measures (N = 146).

	CRT accuracy	Intentional mind wandering	Unintentional mind wandering
CRT RT	−0.339***	0.172*	0.054
CRT Accuracy		0.040	−0.096
Intentional Mind Wandering			−0.255**

* $p < 0.05$, 2-tailed.
** $p < 0.01$.
*** $p < 0.001$.

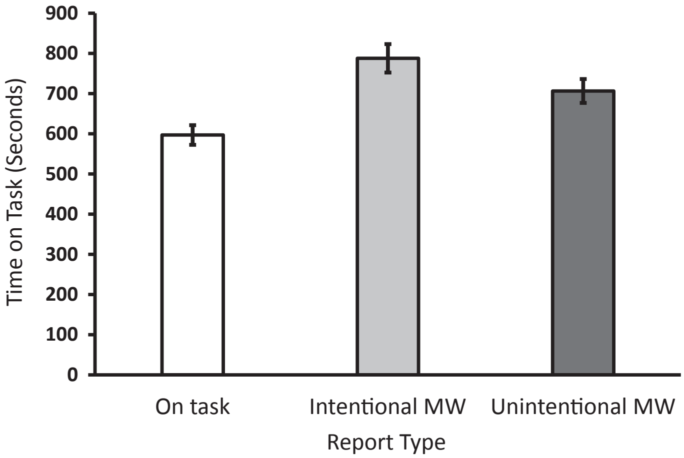

Fig. 4. Time on task (seconds) as a function of report type (on task, intentional, and unintentional). Error bars are ± 1 *SEM*. On-task reports are estimated to be reported earlier in the task compared with intentional and unintentional mind wandering. Moreover, intentional mind wandering reports are estimated to be reported significantly later in the task than unintentional mind wandering.

we also found that intentional mind wandering is more likely to be less vague (or more concrete) than unintentional mind wandering. This finding appears to make sense given that deliberately engaging in a stream of thought should involve greater levels of control (e.g., Golchert et al., 2017; Seli, Risko, et al., 2016), which should in turn allow an individual to develop a more coherent (less vague) train of thought compared with cases in which the individual is attempting to direct her attentional resources to the task at hand, but nevertheless finds her mind wandering. Importantly, this observation raises some potentially interesting hypotheses. For example, research has shown that reduced specificity in thought (i.e., increased vagueness) makes it more difficult for people to concretely imagine their future and develop specific plans and goals (Jing, Madore, & Schacter, 2016), which can in turn result in or exacerbate clinical disorders (e.g., generalized anxiety disorder). Moreover, research has shown that everyday rates of unintentional (but not intentional) mind wandering are associated with various clinical disorders, such as attention-deficit/hyperactivity disorder (ADHD; Seli, Smallwood, Cheyne, & Smilek, 2015) and obsessive-compulsive disorder (OCD; Seli, Risko, Purdon, & Smilek, 2016). Taken together, these findings suggest that the increased vagueness associated with unintentional bouts of mind wandering may be partly responsible for the development and/or maintenance of various clinical disorders, and therefore, that reducing unintentional mind wandering may improve well-being in certain clinical populations.

Although we did not have any a priori predictions, it is reasonable to expect that unintentional mind wandering should have been more strongly associated with ratings of intrusiveness compared with intentional mind wandering. However, in the present study, we found no difference in intrusiveness ratings across intentional and unintentional bouts of mind wandering. In considering this finding, we suggest that it may be the case that participants interpreted intrusiveness in terms of the extent to which they believed their episodes of mind wandering were interfering with their performance on the CRT. If participants did indeed interpret the intrusiveness item in this manner, then the failure to observe a difference in intrusiveness ratings makes sense given that intentional and unintentional mind wandering should not be expected to differentially affect performance in the CRT. Indeed, to perform well on the CRT, participants need only be attentive when the rare and salient target items are presented. Thus, upon presentation of the salient target items, it is presumably the case that any extant episodes of intentional and unintentional mind wandering would be terminated, and participants would produce a correct response. Not only is the exceptionally high CRT accuracy (97.46%) consistent with this view, but so too is the finding that CRT accuracy was not significantly associated with rates of intentional or unintentional mind wandering (i.e., people who mind-wandered more frequently did not show lower rates of accuracy compared with those who mind-wandered less frequently).

Although researchers have reported behavioral (e.g., Phillips, Mills, D'Mello, & Risko, 2016; Wammes, Seli, Cheyne, Boucher, & Smilek, 2016) and neural (Golchert et al., 2017) differences between intentional and unintentional mind wandering, here we show differences in the content of these two types of mind wandering. Recently, it has been argued that researchers ought to distinguish between intentional and unintentional because (a) these two types of mind wandering are sometimes uniquely associated with individual differences and (b) they can be differentially influenced with task manipulations (see Seli, Risko, et al., 2016, for a review). Here, going beyond these previous demonstrations, we show that intentional and unintentional mind wandering are different in terms of the qualitative aspects of their content, which provides further support for the claim that distinguishing between these two types of mind wandering should enrich our understanding of the minds tendency to wander.

Author note

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