All That Twitters Is Not Gold: How Verbally Documenting or Reflecting During or After an Experience Can Affect Enjoyment

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Dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Business Administration in the Graduate School of Duke University

2013
ABSTRACT

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Abstract

Social media and mobile technology now provide consumers with the opportunity to continuously document or reflect on their moment-to-moment internal and external experiences. For instance, “tweets” are often written while one is consuming some experience, just as other forms of social media may be used in their respective ways for documentation or reflection while an experience is unfolding. But what effect does verbal documentation or reflection have on consumers’ enjoyment of their time? The authors propose that when consumers can verbally document or reflect about topics other than the current experience, increased mind wandering can occur, which can help lead to reduced enjoyment. Testing the theoretical model through five experiments, the authors show that verbal documentation or reflection during an experience can reduce enjoyment, regardless of whether that experience is generally enjoyable or generally unenjoyable. However, the same effect does not occur when consumers are specifically asked to verbally document or reflect only about the experience they are taking part in. Verbal documentation or reflection right after an experience ends, which does not increase mind wandering during the experience, can lead to increased enjoyment when consumers are specifically asked to verbally document or reflect only about the experience they just took part in. Implications for the use of social media for verbal documentation and reflection by consumers and marketing managers are discussed.
Dedication

To my parents and to my girlfriend, who day in and day out listened to me talk about my dissertation, and were nice enough to (most of the time) pretend that it was an enjoyable experience for them.
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1. Introduction

Social media and mobile technology now provide consumers with the opportunity to continuously document or reflect on their moment-to-moment internal and external experiences. 62% of online-connected adults worldwide are now using some form of social media (Ipsos 2012). Thus, it is important to understand what the potential benefits and costs are to its use. Twitter, which can be used for verbal documentation or reflection, is arguably at the forefront of this exploding movement. Created in 2006, the average total number of tweets sent out each day has increased from 2 million in 2009 (Bennett 2011) to over 400 million in 2012 (D’Orazio 2012). Twitter was calculated to be the most “buzzed” social network site in 2011 (Wilson 2012). Tweets often are written while the consumer is taking part in some experience (e.g., the experience of watching a concert) or right after it ends, just as other forms of social media are used in their respective ways for documentation or reflection while an experience is unfolding or has just finished. But what effect does verbally documenting or reflecting have on consumers’ enjoyment of their time?

The question of how the opportunity to continuously verbally document or reflect on one’s moment-to-moment internal and external experiences (e.g., through Twitter or other forms of social media) can affect consumers’ enjoyment should be important not only theoretically, but also to consumers and marketers on a practical level. Many experiences that consumers use social media during or right after may be ones created by or associated with particular businesses (e.g., when consumers tweet directly or indirectly about using a company’s product or attending a branded event). Indeed, both consumers and businesses appear to be embracing the possibility of the former tweeting while they are taking part in experiences set up by the latter. For
instance, 17% of social media users say they tweet while watching their evening TV lineup (eMarketer 2011). While the average number of tweets sent per second is about 2,900 (Plafke 2012), a peak of 12,333 per second were sent during the 2012 Super Bowl and a peak of 10,901 were sent during the 2012 Grammy Awards (Horn 2012). In fact, 2012 has been declared by one publication as the year of “must-tweet TV” (Shaw 2012). Twitter’s Jerry Sloan encourages users to tweet while watching television (Bergman 2010), as have many networks like ABC, CBS, CNN, and Comedy Central (Itzkoff 2011). Many live event leaders and creators— from awards show organizations (Alcala 2011) to theater producers (Gilligan 2012) to church preachers (Fentum 2009)— also encourage “live tweeting” among the audience physically present at their events, too, often even going so far as to create “tweet seats” for audience members to tweet from (e.g., Rose 2011). Thus, a better understanding of the effects of verbally documenting or reflecting during an experience (or right after an experience ends) can potentially be important from a practical perspective, as it may have implications in terms of consumer welfare (e.g., when and how consumers’ tweeting can increase or decrease their utility) and for the marketing strategies of organizations (e.g., when and how organizations should encourage tweeting during the experiences they provide or are associated with).

This paper explores how, when, and why encouragement to verbally document or reflect can affect consumers’ enjoyment. In this paper, we will focus on exploring written-down verbal documentation and reflection. Since Twitter provides such an opportunity, we will use the basic elements of tweeting to explore this process. Before presenting the experiments we have run, we will discuss a theoretical model that attempts to explain this process through mind wandering (e.g., Killingsworth and Gilbert 2010; Schooler et al. 2011). We will then discuss how a better understanding of
this process can contribute to the literature on mind wandering, as well as other literatures. Finally, we will discuss how each experiment we will present contributes towards the theoretical model.

1.1 Theoretical Model and Hypotheses

Mind wandering refers to “engaging in cognitions unrelated to the current demands of the external environment” (Schooler et al. 2011). Mind wandering represents a perceptual decoupling, with attention being shifted from the external environment to internal stimuli (Smallwood et al. 2007). Mind wandering has been shown to be associated with decreased memory of experiences (e.g., Risko et al. 2011) and poorer performance related to the demands of the experience at hand (e.g., Smallwood et al. 2007).

Killingsworth and Gilbert (2010) ran a study to explore what effect mind wandering might have on happiness. Participants were asked at various points throughout their day (via iPhone) how happy they were at that moment, what activity they were taking part in at that moment, and whether or not they were currently thinking about something other than what they were currently doing (i.e., whether they were mind wandering). The researchers found that people were generally less happy when they were mind wandering than when they were not, regardless of what activity they were currently taking part in, including the least enjoyable activities. People were significantly less happy when thinking about neutral or unpleasant topics than when engaged in their current experience, and were no more happy when thinking about pleasant topics than when engaged in their current experience. Time-lag analyses suggest that mind wandering was generally the cause of the reduced happiness, rather than just a consequence.
In sum, mind wandering during experiences has been shown to be associated with a range of detrimental effects, and, at least in regards to reduced general happiness, possibly directly lead to detrimental effects. If the process of verbally documenting or reflecting is viewed from the perspective of mind wandering, some basic elements and factors involved in “tweeting” behavior in particular may be important in understanding how, when, and why such behavior may increase mind wandering, and as a result of that increased mind wandering, potentially detrimentally affect the enjoyment regarding one’s time during an experience. Three basic elements or factors that may be particularly important in understanding the relationship between verbal documentation and reflection, mind wandering, and enjoyment regarding experiences are the content one can verbally document or reflect on, whether the experience is a generally enjoyable (i.e., positive) or generally unenjoyable (i.e., negative) one, and whether one verbally documents or reflects during the experience or after the experience has ended.

When a consumer of an experience writes a tweet during the experience, the consumer is generally verbally documenting or reflecting on some aspect of his or her moment-to-moment internal or external experience. For instance, the tweet a consumer writes may be about the external experience the consumer is currently taking part in (e.g., watching a movie). Alternatively, the tweet may be about a topic not related to the external experience that the consumer is simply thinking about internally (i.e., a topic he or she is thinking about at the moment that is not related to the watching of the movie). The relatively large number of tweets sent per second during the Super Bowl and Grammy Awards suggests that consumers often tweet about the experience they are taking part in. However, there should be little doubt that many of the 2,900 tweets sent
on average per second are not related to the overarching experience its writers are
taking part in at that moment. For instance, a recent user research study conducted by
TV Guide found that 47% of its users tweet while watching TV shows. Of those users,
50% of them generally tweet about the show they are watching, while the other 50%
generally tweet about “something else” (TV Guide News 2011).

Experience sampling studies have shown that people tend to engage in mind
wandering anywhere between almost one-third (e.g., Kane et al. 2007; Klinger 1999) and
almost one-half of their waking life in general (e.g., Killingsworth and Gilbert 2010). The
opportunity to verbally document or reflect in general during an experience (such as
through tweeting) may increase this proportion of time for at least one of the following
reasons. First, tweeting may increase mind wandering by providing a reminder to
consumers that there are other topics besides the current experience that they could be
writing (and thus thinking) about. Second, tweeting may increase mind wandering if it
increases the predicted utility of thinking about topics unrelated to the current
experience (i.e., if the opportunity to write out one’s thoughts is seen as an additional
incentive to thinking about unrelated topics). Third, tweeting may increase mind
wandering by leading one to spend more time dwelling on one’s thought (e.g., not only
having the thought, but then thinking about how to write it out in a tweet), taking even
more time away from processing the current experience.

Thus, when consumers are encouraged (e.g., by businesses or organizations) to
verbally document or reflect during an experience, but have the opportunity to do so on
any topic, this should lead to increased consumer mind wandering, which should lead
to reduced enjoyment of their time during the experience. These effects should occur for
both generally enjoyable and generally unenjoyable experiences, since, as discussed, at
least some detrimental effects of mind wandering have been shown to occur for experiences of both valences (e.g., Killingsworth and Gilbert 2010). Smallwood et al. (2008) have shown that retrospective subjective markings of mind wandering and behavioral markings share common variance in significantly predicting neurological indicators of mind wandering, and so seem to reflect a common underlying mental state. Thus, both retrospective subjective indicators (e.g., how much one thinks one had “soaked in” the experience) and more objective indicators (e.g., how much one remembers the details of the experience) should at least partially drive the effect on enjoyment. (See Figure 1 for an overview of the first part of our theoretical model regarding verbally documenting or reflecting during an experience).

H1: Encouragement for consumers to verbally document or reflect in general during an experience will lead to less enjoyment of their time during the experience.

H2: The effect of encouragement for consumers to verbally document or reflect in general during an experience on the enjoyment of their time during the experience will be at least partially mediated by increased mind wandering during the experience.

As discussed, mind wandering occurs when “engaging in cognitions unrelated to the current demands of the external environment,” (Schooler et al. 2011), and represents a perceptual decoupling, with attention being shifted from the external environment to internal stimuli (Smallwood et al. 2007). Thus, if consumers are encouraged to verbally document or reflect during an experience, but are limited to documenting or reflecting only on the current experience (i.e., the external environment), and so not on topics unrelated to the current experience (i.e., internal stimuli), there should be a limited effect on mind wandering, and thus a limited effect on enjoyment of their time during the experience.
H3: Encouragement for consumers to verbally document or reflect during an experience, but when limited to doing so only on the current experience, will have a limited effect on the enjoyment of their time and mind wandering during the experience.

When consumers have the opportunity to verbally document or reflect on any topic during an experience, the physical act of verbally documenting or reflecting would necessarily be preceded by thinking about doing so. As discussed, there may be many reasons why thinking about topics unrelated to one’s current experience during an experience may be increased by the opportunity to verbally document or reflect in general. Therefore, merely thinking about tweeting about topics other than the current experience in itself should be associated with increased mind wandering as such thoughts are, basically by definition, mind wandering. When consumers are encouraged to even simply think about verbally documenting or reflecting during an experience (without writing out the “tweets” they have thought of), this should lead to a reduction in enjoyment of their time during the experience due to increased mind wandering similar to when consumers are encouraged to actually write out their documentations or reflections.

H4: The mere encouragement for consumers to think about verbally documenting or reflecting in general during an experience will lead to less enjoyment of their time during the experience, and this effect will be at least partially mediated by increased mind wandering during the experience.
Figure 1: Theoretical Model: Verbally Documenting or Reflecting During an Experience

Consumers may be encouraged (e.g., by businesses or organizations) to verbally document or reflect during an experience, or they may be encouraged instead to do so right after an experience ends. When verbal documentation or reflection occurs after the experience has already ended, mind wandering during the experience should therefore not be affected like it could be when consumers verbally document or reflect during the experience. Therefore, when encouraged to verbally document or reflect right after an experience ends, there should be a limited effect on mind wandering during the experience, and so a limited direct effect from mind wandering on consumers’ enjoyment. On top of that, however, when encouraged to verbally document or reflect
right after an experience ends, there may be another force at work that may lead to an increase in consumer’s enjoyment regarding their time during the experience that had just taken place, namely, the process of expressive writing (e.g., Burton and King 2004, Pennebaker 1997).

When encouraged to verbally document or reflect right after an experience ends, verbally documenting or reflecting about the experience one has just taken part in may share many similarities with expressive writing. The extant literature on expressive writing has shown that writing about one’s thoughts and feelings regarding experiences one has already taken part in—whether the experience is positive, intensely positive, negative, or traumatic—can have positive effects, such as leading to enhanced (or less negative) mood or less anxiety (e.g., Baikie et al. 2012; Burton and King 2004; Burton and King 2008; for a review, see Pennebaker and Chung 2007), and positive effects (at least on physical health) have been shown to occur even from just two minutes of expressive writing at a time (Burton and King 2008). However, the general process leading to these benefits from expressive writing is still unclear (e.g., Burton and King 2004; Pennebaker and Chung 2007). In fact, Pennebaker and Chung (2007) state that there is a “growing awareness that [expressive writing’s] value cannot be explained by a single cause or theory.”

We know of no studies in the literature that test whether positive effects of expressive writing can extend to writing that occurs right after an experience has ended. To the extent that the same process that leads to positive effects from expressive writing about past experiences extends to writing right after an experience has ended, though, verbal documentation and reflection (e.g., in the form of “tweeting”) about the experience could potentially lead to increased enjoyment regarding one’s time during
the experience that had just taken place. However, mind wandering should not drive this effect, as encouragement to verbally document or reflect just on an experience (whether to do so during an experience (H3) or after an experience ends) should not affect mind wandering during the experience itself. Rather, the effect may be driven by the same mechanism(s) behind the effects of expressive writing about a past experience, which, as discussed, are still unclear (e.g., Burton and King 2004; Pennebaker and Chung 2007).

When consumers are encouraged to verbally document or reflect right after an experience ends, the increased enjoyment should only occur when consumers are encouraged to do so just about the experience. In contrast, when consumers are encouraged to verbally document or reflect right after an experience ends, but have the opportunity to do so on any topic, this opportunity should prevent consumers in general from being fully involved in the expressive writing experience, and thus prevent them from increasing their enjoyment regarding their time during the experience that had just taken place. Since the verbal documentation or reflection occurs after the experience (and not during the experience), there should still be no increase in mind wandering during the experience, though. (See Figure 2 for an overview of the second part of our theoretical model regarding verbally documenting or reflecting right after an experience ends).

H5a: Encouragement for consumers to verbally document or reflect right after an experience ends only about the experience will lead to increased enjoyment regarding their time during the experience that had just taken place, but mind wandering during the experience will not be affected, and thus will not drive the effect.
H5b: Encouragement for consumers to verbally document or reflect right after an experience ends with the opportunity to do so on any topic will not lead to increased enjoyment regarding their time during the experience that had just taken place, nor will mind wandering during the experience be affected.

Figure 2: Theoretical Model (Cont.): Verbally Documenting or Reflecting Right After an Experience Ends

1.2 Theoretical Contributions

If the theoretical model is supported through the five experiments presented in this paper, the main theoretical contributions will be in regards to the literature on mind wandering (e.g., Killingsworth and Gilbert 2010; Schooler et al. 2011). First, the model
would show how, when, and why verbally documenting or reflecting during an experience (e.g., through “tweeting” or even merely thinking about doing so) can, perhaps ironically, increase mind wandering during the experience in terms of both a subjective awareness of it and more objectively, as well. Second, the model would add to the literature on the detrimental effects of mind wandering by showing that mind wandering not only can affect memory (e.g., Risko et al. 2011), general happiness (e.g., Killingworth and Gilbert 2010), and performance (e.g., Smallwood et al. 2007), but also the enjoyment of one’s time during that experience.

If supported, the theoretical model would also contribute to the literatures on choice overload (e.g., Iyengar and Lepper 2000; Sethi-Iyengar et al. 2004), cognitive responses (e.g., Briñol 2004, Shavitt and Brock 1986), and expressive writing (e.g., Burton and King 2004, Pennebaker 1997), which will be elaborated upon in the General Discussion.

1.3 Overview of Experiments

In each of our five main experiments discussed below, participants took part in the experience of watching a presentation online, and were either asked to verbally document or reflect during the experience (in the form of “tweets”), to merely think about doing so, to do so right after the experience ends, or were not asked to verbally document or reflect at all. All participants then rated how much they enjoyed their time while watching the presentation, followed by how much they thought they “soaked in” the presentation (a measure of subjective mind wandering). All participants then took an eight-question multiple-choice quiz on the details of the presentation (a more objective measure of mind wandering).
Experiment 1 supports H1 and H2 by showing that participants who were asked to verbally document or reflect (with the opportunity to do so on any topic they would like) during a generally moderately enjoyable experience enjoyed their time during the experience less than those who were not asked to “tweet” during the experience, and that this effect may be driven by increased mind wandering. Experiment 2 further supports H1 and H2 by showing that these results extend to both generally very enjoyable experiences and generally unenjoyable experiences, ruling out an alternative explanation and prediction. Experiment 3 supports H3 by showing that participants who were asked to verbally document or reflect, but were limited to doing so only about the current experience, did not have detrimental effects on their enjoyment or mind wandering like those who could verbally document or reflect on any topic. Experiment 4 supports H4 by showing that participants who were asked to merely think about verbally documenting or reflecting during an experience (without writing out their “tweets”) enjoyed their time during the experience less than those who were not asked to think about “tweeting” during the experience, and that this effect again appears to be driven by increased mind wandering. Experiment 5 supports H5a and H5b by showing that participants who were asked to verbally document or reflect right after an experience ended had improved enjoyment regarding their time during the experience that had just taken place (with no change in mind wandering during the experience), but only when they were asked to verbally document or reflect just about the experience they had taken part in.

In each main experiment, after the completion of all other key measures, participants were also asked their “post-experience intuition” regarding what effect they think having engaged in alternative “tweeting” behavior would have had on their
enjoyment (e.g., those who had not “tweeted” were asked what effect, if any, having “tweeted” during the experience would have had on their enjoyment). We also ran separate prediction studies for each experiment asking a different set of participants what they expected the results on the three main dependent variables to be for participants in various conditions of the main experiment. We made no a priori predictions for any of these measures, and explored them simply as a means towards better understanding what consumers’ intuitions and naïve theories are regarding how verbal documentation and reflection affects experiences, and what this may suggest regarding why tweeting is becoming an increasingly popular activity.

Experiment 3 also included a separate field study, in which participants were asked about their verbal documentation and reflection behavior, mind wandering, and the enjoyment of their time at events in natural settings in an attempt to add further support to the findings of the main experiment.

(See Tables 1 and 2 in the General Discussion for a condensed summary of results regarding enjoyment (actual and predicted) across experiments. For a complete list of results and more information regarding the results, see the appropriate experiment results subsection).
2. Experiment 1: “Tweeting” vs. Not “Tweeting” During Experiences

2.1 Introduction

Experiment 1 tests the hypothesis (H1) that encouragement to verbally document or reflect in general during an experience will reduce consumers’ enjoyment of their time during the experience. After taking part in the experience of watching a generally enjoyable presentation (during which one group of participants were encouraged to write “tweets” and one group was not), participants were asked how much they enjoyed their time during the experience.

In addition to asking participants how much they enjoyed their time during the experience, we also asked participants how much they thought they had “soaked in” the experience (a subjective indicator of mind wandering), and had participants take an eight-question multiple-choice quiz based on the details of the presentation (a more objective indicator of mind wandering). Either one of these indicators should suggest whether mind wandering may have occurred. As discussed, Smallwood et al. (2008) have shown that retrospective subjective markings of mind wandering and behavioral markings share common variance in significantly predicting neurological indicators of mind wandering, and so seem to reflect a common underlying mental state. Through these indicators of mind wandering, we could test the hypothesis that increased mind wandering will at least partially drive the effect of verbal documentation or reflection on enjoyment (H2).
2.2 Method

2.2.1 Main Experiment

Participants (N = 95) were recruited from Amazon Mechanical Turk’s (mTurk) online subject pool and randomly placed into one condition, and paid for their participation. All participants watched a 16-minute video clip of Emily Oster’s presentation at a recent Technology Entertainment Design (TED) conference on the surprising economics of the prevention of AIDS (Oster 2007). Before viewing the clip, participants in the “Tweeting” condition were asked to write at least eight “tweets” while viewing the clip (so about one every two minutes), and were given the following instructions: “Each of your ‘tweets’ could be about anything: what you are currently doing at the moment, your reflection(s) at the moment, how you are feeling at the moment, something about the presentation you are viewing, whatever.” Each “tweet” was written in a text box underneath the video clip as participants watched the presentation. Participants in the “No tweeting” condition were simply asked to watch the presentation, and so served as a control group.

After watching the presentation, all participants answered the following questions on 11-point Likert-type scales: “How much did you enjoy your time watching this clip?,” followed by “How much do you think you ‘soaked in’ (i.e., learned, ‘absorbed’) this presentation and the details within it?” All participants then took an eight-question multiple-choice quiz based on details from the presentation to test their objective memory of the details of the presentation.

All participants were later asked their gender, age, and whether or not they have used Twitter before (and if they have, about how often they tweet per month on average) in order to explore whether the relationship we may find between tweeting
condition and enjoyment may be affected by these individual difference variables (exploring potential interactions with tweeting condition on enjoyment, as well as potential main effects on enjoyment). All participants were also asked whether or not they had ever watched the presentation prior to the experiment.

2.2.2 Post-experience Intuition

Since we are also interested in what effect people think alternative tweeting behavior would have had for them regarding an experience they already took part in (in this case, a generally moderately enjoyable one), we included a measure to explore this. After completing the quiz, all participants were asked about their intuition regarding how tweeting (if they were in the “No tweeting” condition) or not tweeting (if they were in the “Tweeting” condition) would have affected their enjoyment of their time while watching the TED presentation. More specifically, participants in the “Tweeting” condition were asked to “imagine you did not ‘tweet’ while you were watching this presentation,” while participants in the “No tweeting” condition were asked to “imagine you ‘tweeted’ once every two minutes or so while you were watching this presentation.” All participants were then asked on an 11-point Likert-type scale, “What effect do you think this would have had on how enjoyable of an experience watching this presentation would have been for you?”

2.2.3 Prediction Study

To explore people’s general naïve theories regarding what effect tweeting during generally moderately enjoyable experiences has on the enjoyment of those experiences, we conducted a separate prediction study in which we explained the general details of experiment 1 to a different set of participants on Amazon Mechanical Turk’s (mTurk)
online subject pool (N = 31). We gave these participants the “No tweeting” condition’s mean ratings of enjoyment and how much they thought they “soaked in” the experience, as well as their mean quiz score, and had this different set of participants predict what the results for the “Tweeting” condition would be.

2.3 Results

2.3.1 Main Experiment

In each main experiment presented in this paper, participants were removed from all analyses if the timer indicated that they had watched less than the full length of the presentation, if they indicated they had watched the presentation prior to the experiment, or if they had at least one outlier data point (over three standard deviations above or below the mean) on any of the main dependent variables. MANOVA analyses automatically excluded data listwise from participants missing data on any variable in the MANOVA. (Any other data missing from any particular analysis would be due to participants not completing the variable in that analysis).

Of the 95 participants who took part in experiment 1, a total of 12 participants were removed from all analyses. (10 participants were removed because the timer indicated that they had watched less than the full length of the presentation and two were removed for having watched the presentation prior to the experiment. The MANOVA analysis below automatically excluded data listwise from four additional participants due to missing cells).

Results of a MANOVA (see Figure 3 below for mean ratings and quiz scores with standard error bars for each condition; see Tables 1 and 2 in the General Discussion for a condensed summary of results regarding enjoyment (actual and predicted) across experiments) indicate that participants in the “Tweeting” condition enjoyed their time
while watching the presentation significantly less ($M = 6.03$) than did those in the “No Tweeting” condition ($M = 7.35$; $F(1, 77) = 5.07, p < .05$). Participants in the “Tweeting” condition also thought they had “soaked in” the presentation marginally significantly less ($M = 6.41$) than did those in the “No Tweeting” condition ($M = 7.35$; $F(1, 77) = 3.09, p < .10$). Although directionally similar, there was no significant difference between the average quiz score of participants in the “Tweeting” condition ($M = 5.67$) and the “No Tweeting” condition ($M = 6.13$; $F(1, 77) = 1.85, p < .20$).

Figure 3: Experiment 1: Ratings and Quiz Score by Condition

A multilinear regression model indicates that differences in gender, age, and whether or not participants have used Twitter before did not affect the relationship

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1 Results of a MANOVA without removing any participants (other than data from participants automatically excluded listwise by the analysis due to missing cells) indicate that participants in the “Tweeting” condition enjoyed their time while watching the presentation significantly less ($M = 6.02$) than did those in the “No Tweeting” condition ($M = 7.18$; $F(1, 89) = 4.61, p < .05$). Participants in the “Tweeting” condition also thought they had “soaked in” the presentation significantly less ($M = 6.50$) than did those in the “No Tweeting” condition ($M = 7.51$; $F(1, 89) = 4.17, p < .05$). Participants in the “Tweeting” condition also had marginally significantly lower average quiz scores ($M = 5.48$) than did those in the “No Tweeting” condition ($M = 6.09$; $F(1, 89) = 3.65, p = .06$). Given the similarity in results when including all participants and when excluding particular participants based on our exclusion criteria, for subsequent experiments, we only report results excluding particular participants based on our exclusion criteria.
between tweeting condition and enjoyment, as there were no significant main effects for, or tweeting condition interactions with, any of the individual difference variables (all $p > .15$). A separate multilinear regression model reveals that among those who have used Twitter before, differences in how often participants tweet per month on average did not affect the relationship between tweeting condition and enjoyment, as there was no significant main effect for, or tweeting condition interactions with, this individual difference variable (all $p > .25$).

A Sobel test of mediation (Preacher and Hayes 2004; Sobel 1982) indicates that the effect of tweeting condition on enjoyment was marginally significantly mediated by how much participants thought they had “soaked in” the presentation ($z = -1.77, p < .10$). Similarly, 5,000 bootstrap samples for an indirect effect resulted in a 95% confidence interval with a lower limit of -1.62 and an upper limit of 0.06. Although directionally similar, participants’ quiz score was not found to significantly mediate the effect of tweeting condition on enjoyment ($z = -0.76, p < .50$). Similarly, 5,000 bootstrap samples for an indirect effect resulted in a 95% confidence interval with a lower limit of -0.38 and an upper limit of 0.10.

### 2.3.2 Post-experience Intuition

Using one-sample t-tests with a test value of 6 (i.e., no effect), while participants in the “No tweeting” condition accurately thought that tweeting during the experience would have had a significantly negative effect on their enjoyment ($M = 3.70; t(39) = -6.20, p < .001$), those in the “Tweeting” condition underestimated the detrimental effect of tweeting on enjoyment, and thought that not tweeting during the experience would have had no significant effect on their enjoyment ($M = 6.19; t(41) = .51, p > .60$).
2.3.3 Prediction Study

Using one-sample t-tests with the actual means of the “No tweeting” condition as the test values, this different group of participants underpredicted the detrimental effect of tweeting on enjoyment, predicting that those who tweeted during the experience would not enjoy their time significantly differently ($M = 6.86, t(30) = -1.42, p > .15$) than those who did not tweet. However, this different group of participants accurately predicted that those who tweeted would think they “soaked in” the presentation significantly less ($M = 6.24, t(30) = -3.08, p < .01$) than those who did not tweet, and also thought that they would get a significantly lower quiz score ($M = 5.22, t(30) = -3.28, p < .01$) than those who did not tweet.

2.4 Discussion

The results of experiment 1 suggest that encouragement to verbally document or reflect in general during a moderately enjoyable experience (as indicated by the mean enjoyment rating of 7.35/11 for the control condition who did not tweet) can reduce consumers’ enjoyment of their time during the experience, supporting H1. This effect does not appear to differ based on consumers’ gender, age, or whether or not they have used Twitter before (and if they have, about how often they tweet per month on average). The differences observed between conditions on the subjective measure of mind wandering (i.e., participants’ rating of how much they thought they “soaked in” the experience), and the results of the Sobel test on this measure, suggest that mind wandering may indeed be involved, providing support for H2.

The results of the prediction study suggest that consumers have inaccurate naïve theories regarding the detrimental effect that tweeting during moderately enjoyable experiences can have on enjoyment (even if they think tweeting can increase mind
wandering). Similarly, while the post-experience intuition measure indicates that participants who did not tweet accurately estimated how tweeting would have generally affected the enjoyment of their time during the experience, it appears as though participants who tweeted while watching the presentation were unaware of the detrimental effect it was having on their enjoyment. Taken together, these results suggest that many consumers may be regular Twitter users because they do not predict before they take part in an experience the detrimental effect that it can have on their enjoyment, nor do they realize the detrimental effect it has had on their enjoyment after the fact.

Regarding the realism of the tweeting conditions of the main experiment, if participants in experiment 1 who tweeted were unaware of the detrimental effect it was having on their enjoyment, this suggests that tweeting was not something the participants were particularly averse to doing. Thus, while in real life, people generally get to decide whether or not they would like to tweet (and how many tweets to send out during any particular experience) whether after encouragement to do so or not, asking participants in the main experiment to write at least ten tweets while watching the presentation did not seem to reduce enjoyment because participants were uncomfortable with the activity. Similarly, the fact that participants who tweeted were unaware that doing so hurt their enjoyment suggests that the results were not due to participants being in a reactant state (e.g., Fitzsimons and Lehmann 2004) from being asked to do something they did not want to do.

One alternative explanation for the results of experiment 1 might be that the effect on enjoyment was due not to the tweeting of participants in the “Tweeting condition,” but to participants in the “No tweeting” condition paying even less attention
to the presentation and more to something more enjoyable for them (e.g., another website, talking to a friend) since they were not asked to complete anything while the presentation was occurring. However, since participants in the “No tweeting” condition thought they “soaked in” the experience more than did those in the “Tweeting” condition, this explanation seems unlikely.

While the difference between conditions in how much participants’ thought they “soaked in” the experience suggests that the effect of verbal documentation or reflection on enjoyment may be due to increased mind wandering, one other potential explanation for the effect remains. More specifically, it is possible that the main process behind the effect involves sense-making (e.g., Gilbert et al. 2003), affect labeling (e.g., Lieberman et al. 2007), or emotion-regulation strategies like distraction or reappraisal (e.g., Gross 2002, Sheppes et al. 2011) instead of (or in addition to) mind wandering.

Sense-making refers to “a cognitive process whereby an event is transformed psychologically from one that is surprising, novel, and attention-demanding to one that is common-place, ordinary, and not attention demanding” (Gilbert et al. 2003). Sense-making involves using explaining language that helps an individual understand his or her experience, which can reduce the emotional intensity of the experience. For instance, Moore (2012) found that participants who used explaining language when discussing a consumption experience they had taken part in undermined their evaluations of positive experiences, but improved their evaluations of negative experiences (compared with those who used language that did not help them make sense of the experience).

Similarly, affect labeling involves putting feelings into words (e.g., by selecting which word describes emotional images), and has been shown to mitigate the emotional intensity of experiences (i.e., reduce pleasure from positive emotional experiences, and
reduce distress during negative emotional experiences) (e.g., Lieberman et al. 2007; Lieberman et al. 2011). Affect labeling has been shown to lead to reduced amygdala activity, a region of the brain primarily involved in the processing and memory of emotional reactions (Lieberman et al. 2011).

Similarly, reappraisal involves “construing a potentially emotion-eliciting situation in unemotional terms” (Gross, 2002). One other documented emotion-regulation strategy is distraction, which involves “disengaging from negative emotion by producing neutral thoughts; that is, an early filter is used to block emotional information before it is represented in working memory for further evaluative processing” (Sheppes et al. 2011). Both of these emotion-regulation strategies have been shown to be used in an attempt to reduce the emotional impact of events (at least negative ones) (e.g., Gross 2002, Sheppes et al. 2011). Thus, we cannot rule out the possibility that the detrimental effect of verbal documentation or reflection on enjoyment for participants in experiment 1 could have been due to sense-making, affect labeling, or emotion-regulation strategies like reappraisal or distraction (although it might be unclear why either of the emotion-regulation strategies would be intentionally utilized for a generally moderately enjoyable experience like that in experiment 1).

However, if verbal documentation or reflection affects enjoyment through sense-making, affect labeling, or emotion-regulation strategies like reappraisal or distraction, then “tweeting” during a generally unenjoyable experience should also mitigate affect, leading to increased enjoyment during the experience (i.e., decreased dissatisfaction towards neutral). In contrast, if the effect is indeed driven by mind wandering, “tweeting” during a generally unenjoyable experience should again lead to decreased enjoyment during the experience (i.e., increased dissatisfaction) because, as discussed, at
least some detrimental effects of mind wandering have been shown to occur even
during the least enjoyable experiences (e.g., Killingsworth and Gilbert 2010). Experiment
2 will attempt to generalize our results to generally unenjoyable experiences, and in the
process, further test whether the effect of verbally documenting or reflecting during an
experience on enjoyment (H1) is indeed driven at least partially by increased mind
wandering (H2).
3. Experiment 2: “Tweeting” During Enjoyable vs. Unenjoyable Experiences

3.1 Introduction

Experiment 1 found that encouragement to verbally document or reflect during a generally moderately enjoyable experience can have a detrimental effect on consumers’ enjoyment of their time during the experience, supporting H1. Results also suggested that mind wandering might at least partially drive this effect, providing support for H2. The purpose of experiment 2 is to add further support for these hypotheses by attempting to generalize the findings beyond just generally moderately enjoyable experiences. The experimental design includes participants who verbally document or reflect during a generally unenjoyable experience. As discussed, if sense-making, affect labeling, or emotion-regulation strategies like reappraisal or distraction predominantly drove the main effect in experiment 1, then “tweeting” during a generally unenjoyable experience should increase enjoyment in this experiment. However, if mind wandering predominantly drove the main effect in experiment 1, then “tweeting” during a generally unenjoyable experience should decrease enjoyment in this experiment, too.

As discussed, the presentation participants watched in experiment 1 was a generally moderately enjoyable experience for them (as indicated by the mean enjoyment rating of 7.35/11 for the control condition who did not tweet). In order to test whether the effect of verbal documentation or reflection on enjoyment also extends to enjoyable experiences of greater intensity, experiment 2 also includes an experience rated as generally very enjoyable, which was determined (along with the generally unenjoyable experience used in the experiment) by a pretest.
3.2 Method

3.2.1 Pretest

We conducted a pretest to identify an experience that was generally very enjoyable for participants and an experience that was generally unenjoyable for participants. Participants (n = 548) were recruited from Amazon Mechanical Turk’s (mTurk) online subject pool, and paid for their participation. Participants watched one video clip and then answered the following question on an 11-point Likert-type scale: “How enjoyable of an experience for you was watching this presentation?” Through this pretest, we identified one experience that was generally very enjoyable for participants (Benjamin Zander’s 20-minute presentation on classical music at a recent TED conference, M = 10.00) (Zander 2008), and one that was generally unenjoyable for participants (Philipp Bagus’s recent 20-minute presentation on the state of the Euro for the Ludwig Von Mises Institute, M = 4.09) (Bagus 2011).

3.2.2 Main Experiment

Participants (N = 144) were recruited from Amazon Mechanical Turk’s (mTurk) online subject pool and randomly placed into one condition, and paid for their participation. The experimental design was similar to that used in experiment 1. However, this experiment employed a 2 (Presentation condition: very enjoyable or unenjoyable) x 2 (Tweeting condition: tweeting or no tweeting) between-subjects design, in which participants either watched the generally very enjoyable presentation or the generally unenjoyable presentation, and either were asked to write at least 10 “tweets” while viewing the 20-minute clip (so about one every two minutes, just as in experiment 1) or were simply asked to watch the presentation. After watching the presentation, all participants answered the same questions used in experiment 1 regarding enjoyment.
and “soaking in” the experience, and completed an eight-question multiple-choice quiz based on details from the presentation they had watched.

3.2.3 Post-experience Intuition

After completing the quiz, participants in our main experiment completed the same “post-experience intuition” measure used in experiment 1.

3.2.4 Prediction Study

We also conducted a separate prediction study using the same basic design as that used in experiment 1 using a different set of participants on Amazon’s Mechanical Turk (mTurk) online subject pool (N= 60) who either read about the generally very enjoyable condition or the generally unenjoyable condition.

3.3 Results

3.3.1 Main Experiment

Of the 144 participants who took part in the experiment, a total of 36 participants were removed from all analyses. (34 participants were removed because the timer indicated that they had watched less than the full length of the presentation and two were removed for having watched the presentation prior to the experiment. The MANOVA analysis below automatically excluded data listwise from four additional participants due to missing cells).

Results of a MANOVA including both between-subject variables (Presentation condition and Tweeting condition) reveal significant main effects of both the Presentation condition and the Tweeting condition on each of the three main dependent variables (with each mean significantly lower for the generally unenjoyable presentation than the generally very enjoyable presentation, and each mean significantly lower for
the “Tweeting” condition than the “No tweeting” condition, all $p < .05$), and no
significant interactions between the two between-subject variables on each of the three
main dependent variables (all $p > .40$).

To test whether the effects of verbal documentation or reflection on experiences
extend to both generally very enjoyable experiences and generally unenjoyable
experiences, we ran simple effect tests within the MANOVA for each Presentation
condition.

Examining participants who watched the generally very enjoyable presentation
(see Figure 4 below for mean ratings and quiz scores with standard error bars for each
condition), participants in the “Tweeting” condition enjoyed their time while watching
the presentation marginally significantly less ($M = 7.44$) than did those in the “No
Tweeting” condition ($M = 8.96; F(1, 100) = 3.75, p = .06$). Participants in the “Tweeting”
condition also thought they “soaked in” the presentation marginally significantly less
($M = 7.40$) than did those in the “No Tweeting” condition ($M = 8.69; F(1, 100) = 2.89, p <
.10$). Although directionally similar, there was no significant difference between the
average quiz score of participants in the “Tweeting” condition ($M = 5.48$) and the “No
Tweeting” condition ($M = 6.15; F(1, 100) = 1.69, p < .20$).
More importantly for the purposes of this experiment, examining participants who watched the generally unenjoyable presentation (see Figure 5 below for mean ratings and quiz scores with standard error bars for each condition), participants in the “Tweeting” condition enjoyed their time while watching the presentation significantly less ($M = 3.15$) than did those in the “No Tweeting” condition ($M = 4.93; F(1, 100) = 5.29, p < .05$). Participants in the “Tweeting” condition also thought they “soaked in” the presentation significantly less ($M = 3.81$) than did those in the “No Tweeting” condition ($M = 5.89; F(1, 100) = 7.79, p < .01$). Participants in the “Tweeting” condition also had a marginally significantly lower quiz score ($M = 3.73$) than did those in the “No Tweeting” condition ($M = 4.70; F(1, 100) = 3.66, p = .06$).

![Figure 4: Experiment 2: Ratings and Quiz Score by Condition (Generally Very Enjoyable Experience)](image)
A Sobel test of mediation (Preacher and Hayes 2004; Sobel 1982) collapsing across Presentation condition indicates that the effect of tweeting condition on enjoyment was significantly mediated by how much participants thought they “soaked in” the presentation, an indicator of subjective mind wandering ($z = -3.14, p < .01$). Similarly, 5,000 bootstrap samples for an indirect effect resulted in a 95% confidence interval with a lower limit of -2.89 and an upper limit of -0.68. The effect of tweeting condition on enjoyment was also marginally significantly mediated by participants’ quiz score, an indicator of more objective mind wandering ($z = -1.82, p < .10$). Similarly, 5,000 bootstrap samples for an indirect effect resulted in a 95% confidence interval with a lower limit of -1.57 and an upper limit of 0.01.

### 3.3.2 Post-experience Intuition

Using one-sample t-tests with a critical value of 6 (i.e., no effect), participants in the “No tweeting” condition who watched the generally very enjoyable presentation...
accurately thought that tweeting during the experience would have had a significantly negative effect on their enjoyment \((M= 3.44; t(26)= -5.97, p < .001)\), and those in the “Tweeting” condition who watched the same presentation accurately thought that not tweeting during the experience would have had a significantly positive effect on their enjoyment \((M= 8.19; t(25)= 4.53, p < .001)\).

However, while participants in the “No tweeting” condition who watched the generally unenjoyable presentation thought that tweeting would have had a marginally significantly negative effect on their enjoyment \((M= 4.96; t(26)= -1.84, p < .10)\), and so were generally accurate, those in the “Tweeting” condition who watched the same presentation underestimated the detrimental effect of tweeting on enjoyment, and thought that not tweeting would have had no significant effect on their enjoyment \((M= 5.22; t(26)= -1.50, p = .15)\).

3.3.3 Prediction Study

For the different group of participants who read about the generally very enjoyable condition, using one-sample t-tests with the actual means of the “No tweeting” condition as the test values, this group accurately predicted that those who tweeted during the experience would enjoy their time significantly less \((M= 7.34, t(29)= -3.88, p < .001)\) and would think they “soaked in” the presentation significantly less \((M= 6.19, t(29)= -5.92, p < .001)\) than those who did not tweet, and also thought that they would get a significantly lower quiz score \((M= 4.79, t(29)= -4.39, p < .001)\) than those who did not tweet.

For participants who read about the generally unenjoyable condition, using one-sample t-tests with the actual means of the “No tweeting” condition as the test values, this different group of participants underpredicted the detrimental effect of tweeting on
enjoyment, predicting that those who tweeted during the experience would not enjoy their time significantly differently ($M=4.94$, $t(29)=0.05$, $p>.90$) than those who did not tweet. However, this different group of participants accurately predicted that those who tweeted during the experience would think they “soaked in” the presentation significantly less ($M=4.45$, $t(29)=-3.83$, $p<.001$) and would get a significantly lower quiz score ($M=3.48$, $t(29)=-3.58$, $p<.01$) than those who did not tweet.

3.4 Discussion

The results of experiment 2 suggest that the detrimental effect of encouragement to verbally document or reflect during an experience on consumer enjoyment extend to both generally very enjoyable experiences and generally unenjoyable experiences, adding further support to H1. These results also help to rule out an alternative explanation for the main effect found in experiment 1, namely, that the effect was driven by sense-making, affect labeling, or emotion-regulation strategies like reappraisal or distraction.

As discussed, mind wandering has been shown to lead to reduced happiness during all activities tested, including the least enjoyable ones (Killingsworth and Gilbert 2010), and so our results regarding enjoyment are consistent with these findings. The differences observed between conditions on both the subjective and more objective measures of mind wandering, and the results of the Sobel test for both measures, supports the hypothesis (H2) that mind wandering does indeed drive the effect.

The results of the “post-experience intuition” measure and the separate prediction study suggest that consumers’ intuition and naïve theories are generally accurate in regards to how verbally documenting and reflecting during generally enjoyable experiences can affect enjoyment. However, the results also suggest that this
accuracy in intuition and naïve theories does not extend to when the same actions occur during generally unenjoyable experiences. More specifically, consumers do not predict that tweeting during such experiences can detrimentally affect enjoyment (even if they think tweeting can increase mind wandering), and those who tweeted during the experience appeared to be unaware of the detrimental effect it was having on their enjoyment. These results further support the suggestion that many consumers may be regular Twitter users because they often do not realize the detrimental effect it can have or has had on their enjoyment during experiences.

In sum, the results of experiments 1 and 2 suggest that encouragement for consumers to verbally document or reflect during an experience (whether generally enjoyable or generally unenjoyable) can have a detrimental effect on consumers’ enjoyment of their time during the experience, supporting H1, and that this effect seems to be driven by an increase in mind wandering, supporting H2. However, one remaining question regarding the effect of “tweeting” on mind wandering is whether the increased mind wandering is due to what one has the opportunity to verbally document or reflect on, or simply due just to the physical act of writing in itself (or both). In other words, when one tweets, does this lead one to mind wander more because of, say, just the time it takes to type one’s tweets out that comes at the expense of focusing exclusively on the current experience? Or does the increased mind wandering relate specifically to what one has the opportunity to verbally document or reflect on? Experiment 3 will explore both possibilities.

4.1 Introduction

The main purpose of experiment 3 is to determine what aspects of the verbal documentation or reflection process lead to reduced enjoyment: what one can actually “tweet” about and/or simply the physical act of writing “tweets” in itself. As discussed, mind wandering comes from “engaging in cognitions unrelated to the current demands of the external environment” (Schooler et al. 2011), and represents a perceptual decoupling, with attention being shifted from the external environment to internal stimuli (Smallwood et al. 2007). Thus, if consumers are encouraged to verbally document or reflect during an experience, but are limited to documenting or reflecting just on the current experience (i.e., the external environment) and do not have the opportunity to do so on topics unrelated to the current experience (i.e., internal stimuli), we predict that there should be a limited effect on mind wandering, and thus a limited effect on the enjoyment of their time during the experience (H3).

In order to test this hypothesis, participants took part in an experience, and either were asked to “tweet” or not, just as in experiments 1 and 2. However, different requests were made for participants who were asked to verbally document or reflect depending on which tweeting condition they were in. Participants in the “Tweet about anything” condition received no specific instructions regarding what they could only tweet about (just as in experiments 1 and 2), and so had the opportunity to do so on any topic, while those in the new “Tweet only about experience” condition were specifically asked to tweet just about the experience at hand. In other words, while participants in the “Tweet only about experience” condition were asked to tweet just about the experience, those in
the “Tweet about anything” condition could tweet about the experience and/or any other topic they wished to tweet about.

If participants who could tweet just about the experience had the same reduction in enjoyment as those who could also tweet about other topics, this would suggest that the detrimental effect of tweeting on enjoyment is due at least partially to the physical act of writing a tweet. However, if participants who could tweet just about the experience did not show significant differences in enjoyment compared with those who did not tweet at all, this would support the hypothesis (H3) that the detrimental effect that tweeting has on enjoyment is due not to the physical act of writing tweets, but to the specific content one has the opportunity to verbally document or reflect on, namely, topics other than the current experience.

To help support the results of the main experiment, we also conducted a field study which explored the relationship between verbal documentation or reflection behavior across various platforms (tweets on Twitter, text messages, and status updates on Facebook), mind wandering, and the enjoyment of consumers’ time during experiences in natural settings.

4.2 Method

4.2.1 Main Experiment

Participants (N = 205) were recruited from Amazon Mechanical Turk’s (mTurk) online subject pool, and paid for their participation. The experimental design was similar to that used in experiments 1 and 2, except there was an additional tweeting condition, and all participants in this experiment watched the Benjamin Zander presentation (Zander 2008). In addition to the “No tweeting” condition, there were two conditions in which participants were asked to tweet. The “Tweet about anything”
condition was the same as the “Tweeting” condition in previous experiments; participants received the same instructions that “Each of your ‘tweets’ could be about anything: what you are currently doing at the moment, your reflection(s) at the moment, how you are feeling at the moment, something about the presentation you are viewing, whatever.” In contrast, the new “Tweet only about experience” condition received the following instructions regarding the content of their tweets: “Each of your ‘tweets’ should be about the presentation you are viewing.” Thus, while participants in both tweeting conditions were asked to write at least 10 tweets while watching the presentation, participants in the “Tweet only about experience” condition were asked to tweet just about the presentation, while those in the “Tweet about anything” condition were asked to tweet, and could do so either about the presentation or about any other topic they wished to tweet about.

4.2.2 Post-experience Intuition

After completing the quiz, participants in our main experiment completed the same “post-experience intuition” measure used in experiments 1 and 2.

4.2.3 Prediction Study

We also conducted a separate prediction study using the same basic design as that used in experiments 1 and 2 using a different set of participants on Amazon’s Mechanical Turk (mTurk) online subject pool (N= 61) who either were asked about participants in the “Tweet about anything” condition or the “Tweet only about experience” condition.

4.2.4 Field Study

Participants (N = 123) were recruited from an outdoor flea market and from an
outdoor festival at a park, and paid for their participation. Participants were asked on 11-point Likert-type scales how much they had been enjoying their time at the event they were at, as well as how much they thought they were “soaking in” (e.g., absorbing) the experience they were at. Participants were then asked about their activities regarding a variety of verbal documentation and reflection behaviors up until that point during the experience: how many tweets they had posted on Twitter that were related to the experience and how many that were unrelated to the experience, how many text messages they had sent that were related to the experience and how many that were unrelated to the experience, and how many status updates they had posted on Facebook that were related to the experience and how many that were unrelated to the experience (although only participants at the festival at the park received the Facebook-related questions). Participants were also asked how much time up until that point they had spent at the event they were at.

4.3 Results

4.3.1 Main Experiment

Of the 205 participants who took part in the experiment, a total of 59 participants were removed from all analyses. (46 participants were removed because the timer indicated that they had watched less than the full length of the presentation, nine were removed for having watched the presentation prior to the experiment, and four were removed for having at least one outlier data point (over three standard deviations above or below the mean) on any of the main dependent variables. The MANOVA analysis below automatically excluded data listwise from five additional participants due to missing cells).
Results of a MANOVA reveal significant main effects of condition on enjoyment and how much participants thought they “soaked in” the presentation ($p < .05$ and $p < .01$, respectively), and a marginally significant main effect of condition on quiz score ($p < .10$).

More importantly for the purposes of this experiment, to test whether the effects of tweeting depended on what topics participants had the opportunity to verbally document or reflect on, we ran contrast analyses within the MANOVA between the “Tweet about anything” condition and the average of the “Tweet only about experience” and the “No tweeting” conditions, as well as contrast analyses between the “Tweet only about experience” and the “No tweeting” conditions (see Figure 6 below for mean ratings and quiz scores with standard error bars for each condition).

![Figure 6: Experiment 3: Ratings and Quiz Score by Condition](image)

Contrast analyses indicate that participants in the “Tweet about anything” condition enjoyed their time while watching the presentation significantly less ($M = 8.14$) than did the average of those in the “Tweet only about experience” and “No
Tweeting” conditions ($M = 9.34; F(1, 138) = 7.01, p < .01$). Participants in the “Tweet about anything” condition also thought they “soaked in” the presentation significantly less ($M = 7.42$) than did the average of those in the “Tweet only about experience” and “No Tweeting” conditions ($M = 8.65; F(1, 138) = 10.00, p < .01$). Participants in the “Tweet about anything” condition also had significantly lower quiz scores ($M = 5.47$) than did the average of those in the “Tweet only about experience” and “No Tweeting” conditions ($M = 6.04; F(1, 138) = 4.44, p < .05$).

Contrast analyses indicate that there were no significant differences on the main dependent variables for participants in the “Tweet only about experience” condition and those in the “No tweeting” condition. More specifically, there was no significant difference between how much participants in the “Tweet only about experience” condition enjoyed their time while watching the presentation ($M = 9.03$) compared with those in the “No tweeting” condition ($M = 9.53; F(1, 138) = 1.10, p = .30$). There was also no significant difference between how much participants in the “Tweet only about experience” condition thought they “soaked in” the presentation ($M = 8.63$) compared with those in the “No tweeting” condition ($M = 8.67; F(1, 138) = 0.01, p > .90$). There was also no significant difference between the average quiz score of participants in the “Tweet only about experience” condition ($M = 5.97$) and the average quiz score of those in the “No tweeting” condition ($M = 6.08; F(1, 138) = 0.13, p > .70$).

We tested for mediation using the Hayes and Preacher (2011) mediation procedure for multicategorical variables. The difference in enjoyment between participants in the “Tweet about anything” condition and those in the “No tweeting” condition was significantly mediated by how much participants thought they “soaked in” the presentation; 5,000 bootstrap samples for an indirect effect resulted in a 95%
confidence interval with a lower limit of 0.32 and an upper limit of 1.82. Similarly, the difference in enjoyment between participants in the “Tweet about anything” condition and those in the “Tweet only about experience” condition was significantly mediated by how much participants thought they “soaked in” the presentation; 5,000 bootstrap samples for an indirect effect resulted in a 95% confidence interval with a lower limit of 0.32 and an upper limit of 1.98.

Similarly, the difference in enjoyment between participants in the “Tweet about anything” condition and those in the “No tweeting” condition was marginally significantly mediated by participants’ quiz score; 5,000 bootstrap samples for an indirect effect resulted in a 90% confidence interval with a lower limit of 0.02 and an upper limit of 0.44. Although directionally similar, participants’ quiz score was not found to significantly mediate the difference in enjoyment between participants in the “Tweet about anything” condition and those in the “Tweet only about experience” condition; 5,000 bootstrap samples for an indirect effect resulted in a 90% confidence interval with a lower limit of -0.01 and an upper limit of 0.42.

Each participant’s set of tweets was also coded by one of the researchers (blind to each participant’s condition) in terms of whether each tweet was about the experience or about topics other than the experience (i.e., about anything else). Participants in the “Tweet about anything” condition wrote significantly more tweets not about the experience ($M = 1.09$) than did those in the “Tweet only about experience” condition ($M = 0.00$; $F(1, 83) = 13.47, p < .001$).

Participants in the “Tweet about anything” condition did not significantly differ in terms of the average total number of tweets they wrote ($M = 11.45$) compared with those in the “Tweet only about experience” condition ($M = 11.07, F(1, 83) = 0.52, p > .40$).
(One sample t-tests indicate that participants in both the “Tweet about anything” and “Tweet only about experience” conditions wrote significantly more tweets than the 10 they were requested to write \( t(43) = 3.67, p < .001; t(40) = 3.07, p < .01 \), respectively). There was also no significant difference in terms of the average total number of words written by participants in the “Tweet about anything” condition \( (M = 129.30) \) and by those in the “Tweet only about experience” condition \( (M = 142.49, F(1, 83) = 1.27, p > .20) \).

We also ran Pearson correlations between the content of tweets and participants’ enjoyment specifically for participants in the “Tweet about anything” condition (i.e., the only participants who had the opportunity to write tweets about topics other than the current experience). There was a marginally significant negative correlation between the total number of tweets written about topics other than the current experience and enjoyment \( (r = -.28, p < .10) \). However, there was not a significant correlation between the total number of tweets written about the experience and enjoyment \( (r = -.08, p = .60) \).

Although directionally similar, Pearson correlations for participants in the “Tweet about anything” condition indicate there was not a significant correlation between the total number of tweets written about topics other than the current experience and how much participants thought they had “soaked in” the experience \( (r = -.25, p = .10) \), nor with participants’ quiz score \( (r = -.08, p < .70) \). (There was not a significant correlation between the total number of tweets written about the experience and how much participants thought that had “soaked in” the experience \( (r = .03, p > .80) \), nor with participants’ quiz score \( (r = .05, p > .70) \)).

### 4.3.2 Post-experience Intuition

Using one-sample t-tests with a test value of 6 (i.e., no effect), participants in the
“No tweeting” condition accurately thought that tweeting during the experience would have had a significantly negative effect on their enjoyment \( (M= 3.97; t(60)= -6.29, p < .001) \), and participants in the “Tweet about anything” condition accurately thought that not tweeting during the experience would have had a significantly positive effect on their enjoyment \( (M= 7.55; t(43)= 3.86, p < .001) \). However, participants in the “Tweet only about experience” condition overestimated the detrimental effect of tweeting just about the experience on enjoyment, and thought that not tweeting during the experience would have had a significantly positive effect on their enjoyment \( (M= 7.80; t(39)= 4.46, p < .001) \). A contrast analysis within an ANOVA testing the effect of condition on this dependent variable reveals that participants in the “Tweet only about experience” condition thought that not tweeting during the experience would not have affected their enjoyment significantly differently than did those in the “Tweet about anything” condition \( (F(1, 142)= 0.21, p > .60) \), reflecting a general underestimation of the detrimental effects on enjoyment of tweeting with the opportunity to do so on any topic compared with being limited to doing so just about the experience.

### 4.3.3 Prediction Study

Using one-sample t-tests with the actual means of the “No tweeting” condition as test values, the different group of participants who predicted the results of those in the “Tweet about anything” condition accurately predicted that they would enjoy their time significantly less \( (M= 7.29, t(30)= -5.71, p < .001) \), would think they “soaked in” the presentation significantly less \( (M= 5.85, t(30)= -8.35, p < .001) \), and would get a significantly lower quiz score \( (M= 4.40, t(30)= -5.63, p < .001) \) than those who did not tweet.

The different group of participants who predicted the results of those in the
“Tweet only about experience” condition overpredicted the detrimental effect of tweeting only about the experience on enjoyment and mind wandering, predicting that they would enjoy their time significantly less ($M = 7.49$, $t(29) = -5.19, p < .001$), would think they “soaked in” the presentation significantly less ($M = 6.74$, $t(29) = -4.14, p < .001$), and would get a significantly lower quiz score ($M = 5.09$, $t(29) = -3.09, p < .01$) than those who did not tweet.

A MANOVA including predictions on all three dependent variables indicates that these different sets of participants did not predict any significant differences between participants in the “Tweet about anything” condition and those in the “Tweet only about experience” condition in terms of enjoyment, how much they thought they “soaked in” the experience, or quiz score (all $p > .10$), reflecting a general underprediction of the detrimental effects on enjoyment and mind wandering of tweeting with the opportunity to do so on any topic compared with being limited to doing so just about the experience.

### 4.3.4 Field Study

We calculated an average of the number of messages (tweets on Twitter, text messages, and/or Facebook status posts) that participants indicated they wrote on each platform that were related to the experience they were taking part in (by combining the total number of messages that participants indicated they wrote on each platform that were related to the experience, and dividing that number by the total number of different platforms participants gave information regarding). We also calculated an average of the number of messages (tweets on Twitter, text messages, and/or Facebook status posts) that participants indicated they wrote on each platform that were unrelated to the experience they were taking part in (by combining the total number of messages
that participants indicated they wrote on each platform that were unrelated to the experience, and dividing that number by the total number of different platforms participants gave information regarding).

We then ran Pearson correlations between the content of messages and participants’ enjoyment of their time at the event they were taking part in. Combining the 123 participants who took part in the field study at either event, one participant was removed from the analyses for not providing any information regarding verbal documentation or reflection behavior. Excluding 27 participants who had indicated they had spent one hour or less at the event they were at before completing the survey, there was a significant negative correlation between the average number of messages participants wrote on each platform about topics other than the current experience and enjoyment ($r = -0.23, p < 0.05$). In contrast, there was not a significant correlation between the average number of messages participants wrote on each platform about the experience and enjoyment ($r = -0.03, p > 0.70$). Similarly, Pearson correlations excluding the 27 participants indicate there was a significant negative correlation between the average number of messages participants wrote on each platform about topics other than the current experience and how much participants thought they were “soaking in” the experience ($r = -0.24, p < 0.05$). In contrast, there was not a significant correlation between the average number of messages participants wrote on each platform about the
experience and how much participants thought they were “soaking in” the experience \( (r = -0.04, p > 0.60) \).  

4.4 Discussion

The results of this experiment replicate the effect that encouragement to verbally document or reflect in general during an experience can have on consumers’ enjoyment of their time during the experience, and once again suggests that mind wandering drives the effect, adding further support to H1 and H2. More importantly for the purposes of this experiment, though, results indicate that this same effect does not occur when consumers are limited to verbally documenting or reflecting just about the current experience, and so when they do not have the flexibility to do so about other topics, supporting H3. The physical act of writing tweets for participants in the “Tweet about anything” and “Tweet only about experience” was similar (e.g., there was no difference in the average total number of tweets written or the average total number of words written between conditions). This suggests that the effect that verbally documenting or reflecting during an experience can have on the enjoyment of one’s time during an experience stems from what one can actually verbally document or reflect on. When consumers are limited to verbally documenting or reflecting only on the current experience and how much participants thought they were “soaking in” the experience \( (r = -0.04, p > 0.60) \).  

1 Using the full data set including the 27 participants who had indicated they had spent one hour or less at the event they were at before completing the survey, although similar to the results excluding these participants, there was not a significant correlation between the average number of messages participants wrote on each platform about topics other than the current experience and enjoyment \( (r = -0.13, p < 0.20) \), nor with how much they thought they were “soaking in” the experience \( (r = -0.11, p = 0.25) \). (Using the full data set including these participants, there was not a significant correlation between the average number of messages participants wrote on each platform about the experience and enjoyment \( (r = 0.04, p > 0.70) \), nor with how much they thought they were “soaking in” the experience \( (r = 0.10, p > 0.25) \). Since the two events in our field study were relatively large-scale events, perhaps the minority of participants who had spent one hour or less at either event before completing the survey did not have an opportunity yet to sufficiently “experience” the event (e.g., for the relationships between their mind wandering, verbal documentation or reflection behavior, and the enjoyment of their time during the experience to sufficiently develop).
experience, there is no significant increase in mind wandering, and the same detrimental effect on enjoyment does not occur.

Participants in the “Tweet about anything” condition did indeed write a significant number of tweets on topics not about the experience compared with those in the “Tweet only about experience” condition (who did not write any tweets on topics not about the experience). Among participants who could tweet about any topic, the number of tweets they wrote about the experience was uncorrelated with their enjoyment during the experience, which adds further support that writing tweets in itself does not necessarily affect enjoyment. However, the number of tweets these participants wrote about topics other than the current experience was negatively correlated with their enjoyment during the experience, suggesting that the relationship between enjoyment and tweeting stems from the opportunity to write tweets about topics other than the current experience.

Results from the “post-experience intuition” measure and the separate prediction study suggest that consumers’ intuition and naïve theories regarding tweeting during experiences is such that they do not make a distinction between how encouragement to tweet just about the current experience vs. having the opportunity to also tweet about other topics can affect enjoyment, at least in regards to generally very enjoyable experiences. More specifically, consumers appear to think that either situation leads to the same detrimental effects for generally very enjoyable experiences, despite the fact that encouragement to verbally document or reflect just about the experience does not lead to these effects.

Participants who were given the freedom to verbally document or reflect on any topic they wished should have presumably, if anything, only enjoyed their time during
the experience more than those who were asked to verbally document or reflect just on the current experience. After all, the former group could have simply thought about tweeting just about the experience at hand if that is what would make their time most enjoyable (or tweet in any other way that would do the same). In other words, similar to how the pursuit and assessment of happiness can be self-defeating (Schooler et al. 2003), the results of this experiment suggest that the group of participants who were given the greater opportunity to pursue the maximization of the enjoyment of their time evidently did not know how best to do so, and utilized this opportunity in ways (in behavior or at least in thought) that actually hurt their experience relative to those asked to pursue a more limited range of possible behaviors.

The reduced flexibility for participants in the “Tweet only about experience” condition also allows us to further explore whether the reduced enjoyment of participants who tweeted throughout our experiments could be due at least partially to any reactance on the part of participants (e.g., Fitzsimons and Lehmann 2004) and/or due to simply feeling uncomfortable with the tweeting process they were asked to take part in. Participants in the “Tweet only about experience” condition had reduced flexibility compared with those in the “Tweet about anything” condition. Therefore, if anything, the former group should have been more likely to be reactant than the latter group to what was being asked of them (and/or have been more uncomfortable with the tweeting process). However, participants in the “Tweet only about experience” condition showed greater enjoyment of their time during the experience than those in the “Tweet about anything” condition. The fact that participants in both tweeting conditions also wrote on average significantly more tweets than the ten that were asked
of them further supports that participants were not uncomfortable with the tweeting process, as it suggests that they often wrote tweets out of their own volition.

The results of the field study, in which participants were asked about their verbal documentation or reflection behavior in natural settings, provides some evidence that some of the findings from the main experiment may extend to real-world settings and beyond the writing of tweets. More specifically, results indicate that, at least among participants who had spent sufficient time at their event, there was a negative relationship between the average number of messages they wrote on each platform (tweets on Twitter, text messages, and/or Facebook status posts) that were about topics other than the current experience and the enjoyment of their time (and with their mind wandering) during the experience. However, there was no relationship between the average number of messages participants wrote across platforms about the current experience and their enjoyment of their time (nor with their mind wandering) during the experience. Although strictly correlational (and so causality cannot be determined), these results add some support that the enjoyment of consumers’ time and mind wandering during an experience may not necessarily be related to verbal documentation or reflection in general, but may be specifically related to verbal documentation or reflection about topics other than the experience they are taking part in.

In sum, the results of experiment 3 suggest that encouragement to verbally document or reflect during an experience with the opportunity to do so on any topic can reduce enjoyment during the experience (at least partially through increased mind wandering), but that by being limited to doing so just about the experience, this same effect no longer occurs, supporting H3. While we found that participants who had the opportunity to tweet about any topic did indeed write a significant number of tweets on
topics other than the experience, we cannot conclude that the actual writing of such
tweets was the sole cause of the reduction in enjoyment by these participants. For one,
the results of this experiment suggest that the physical act of “tweeting” does not in
itself necessarily affect enjoyment (at least when the tweets are about the current
experience). More importantly, though, the physical act of verbally document or
reflecting on a particular topic would necessarily be preceded by thinking about doing
so. Thus, participants in the “Tweet about anything” condition, who had the
opportunity to verbally document or reflect about topics other than the current
experience, generally thought about doing so. Such thinking in itself should be
associated with increased mind wandering as such thoughts are, basically by definition,
mind wandering.

The next experiment tests the hypothesis (H4) that encouragement for consumers
to merely think about verbally documenting or reflecting in general during an experience
will lead to less enjoyment of their time during the experience, and that this effect will be
driven by increased mind wandering during the experience. In order to accomplish this,
the next experiment experimentally manipulates whether or not participants are
encouraged simply to think about “tweets” they would write (but not actually write
them).
5. Experiment 4: Merely Thinking About “Tweeting” vs. Not “Tweeting” At All During Experiences

5.1 Introduction

As discussed, experiment 3 showed that participants who “tweeted” only about the current experience after being asked to do so did not show any significant differences in enjoyment or mind wandering compared with those who were not asked to “tweet” at all, supporting H3. This suggests that the mere physical act of verbal documentation or reflection during an experience does not in itself necessarily lead to the aforementioned effects (at least when such verbal documentation or reflection is about the current experience), but rather that the effects observed for participants in the “Tweet about anything” condition were due to the specific opportunity to verbally document or reflect on topics other than the current experience, perhaps from writing such tweets or even simply from merely thinking about doing so (which would, naturally, precede the writing of “tweets” about topics other than the current experience).

This proposed experiment aims to test the hypothesis (H4) that encouragement for consumers to merely think about verbally documenting or reflecting in general during an experience will lead to less enjoyment of their time during the experience, and that this effect will be driven by increased mind wandering during the experience, similar to when consumers are encouraged to actually write out their documentations or reflections. We propose to accomplish this by including new conditions in which participants will be encouraged to simply think about “tweets” they would write (but not actually write them). If such encouragement leads these participants to reduced enjoyment and increased mind wandering, this will help add insight into the process...
behind how encouragement to verbally document or reflect affects experiences, and add further support that the physical act of writing out one’s thoughts or observations is not necessary for detrimental effects to occur.

5.2 Method

5.2.1 Main Experiment

Participants (N = 165) were recruited from Amazon Mechanical Turk’s (mTurk) online subject pool, and paid for their participation. The experimental design was similar to that used in experiments 1-3, except all participants watched the Benjamin Zander presentation (Zander 2008), and instead of participants in tweeting conditions being asked to write out at least 10 tweets while watching the Benjamin Zander presentation (Zander 2008), participants in each tweeting condition were asked to simply think of at least 10 tweets they would write in the text box that appeared underneath the video clip (and to not actually write any tweets in the text box). All participants received the same instructions regarding their tweets that participants in the tweeting conditions in experiments 1 and 2 received (“Each of your ‘tweets’ could be about anything…”). While participants in the “Think about tweeting” condition were told simply that they would later be asked specific questions about the tweets they had thought of writing during the presentation, participants in the “Think about tweeting (write later)” condition were told that soon after viewing the presentation, they would
be asked to write the same tweets they had thought of writing during the presentation.\(^1\)

However, both tweeting conditions were intended to serve the same purpose: to explore whether merely thinking about verbally documenting or reflecting in general during an experience can detrimentally affect consumers’ experiences similar to when the process includes the physical act of writing. Both tweeting conditions were included to more broadly operationalize this process (i.e., to account for possible variations regarding this process), and we expected similar results from the two conditions.

### 5.2.2 Post-experience Intuition

After completing the quiz, participants in our main experiment completed the same “post-experience intuition” measure used in experiments 1-3, except that those in the tweeting conditions were asked what effect they think actually writing out their tweets during the presentation would have had on their enjoyment.

### 5.2.3 Prediction Study

We also conducted a separate prediction study with the same basic design as that used in experiments 1-3 using a different set of participants on Amazon’s Mechanical Turk (mTurk) online subject pool (N= 31). This different set of participants was asked about the participants who would be encouraged to think about tweets they would write (and not to actually write them) during the presentation in general (no distinction

\(^1\) In order to maintain the truthfulness of our original instructions that participants had received before watching the presentation, after completing all other dependent variables, participants in the “Think about tweeting” condition were asked how many “tweets” they had thought to write that were related to the presentation and unrelated to the presentation. Similarly, participants in the “Think about tweeting (write later)” condition, after being asked the same questions, were asked to actually write out at least ten tweets. Since these last measures were only included to maintain the truthfulness of our original instructions, and since completing all other dependent variables first may have affected participants’ responses on these final measures (e.g., due to the effect that first being asked about their experience in different ways could potentially have had and/or simply due to the passage of time since first thinking out each tweet during the presentation), we did not use these final measures in any analyses.
was made between the “Think about tweeting” condition and the “Think about tweeting (write later)” condition when explaining the main experiment design to this different set of participants).

5.3 Results

5.3.1 Main Experiment

Of the 165 participants who took part in the experiment, a total of 72 participants were removed from all analyses. (59 participants were removed because the timer indicated that they had watched less than the full length of the presentation, 12 were removed for having watched the presentation prior to the experiment, and one was removed for having at least one outlier data point (over three standard deviations above or below the mean) on any of the main dependent variables. The MANOVA analysis below automatically excluded data listwise from two additional participants due to missing cells).

Results of a MANOVA reveal a significant main effect of condition on enjoyment ($p < .05$), and marginally significant main effects of condition on how much participants thought they “soaked in” the presentation and quiz score ($p < .10$).

To more specifically test whether the effects of tweeting extend to merely thinking about tweeting, we ran contrast analyses within the MANOVA between the “No tweeting” condition and the average of the tweeting conditions (i.e., the “Think about tweeting” and “Think about tweeting (write later)” conditions), as well as contrast analyses between the tweeting conditions (see Figure 7 below for mean ratings and quiz scores with standard error bars for each condition).
Contrast analyses indicate that participants in the tweeting conditions enjoyed their time while watching the presentation significantly less ($M = 8.28$) than did those in the “No tweeting” condition ($M = 9.65$; $F(1, 88) = 6.70, p < .05$). Participants in the tweeting conditions also thought they “soaked in” the presentation significantly less ($M = 8.09$) than did those in the “No tweeting” condition ($M = 9.06$; $F(1, 88) = 4.84, p < .05$). Participants in the tweeting conditions also had significantly lower quiz scores ($M = 5.42$) than did those in the “No tweeting” condition ($M = 6.29$; $F(1, 88) = 5.02, p < .05$).

Contrast analyses indicate that there were no significant differences on the main dependent variables for participants in the “Think about tweeting” condition and those in the “Think about tweeting (write later)” condition. More specifically, there was no significant difference between how much participants in the “Think about tweeting” condition enjoyed their time while watching the presentation ($M = 8.21$) compared with those in the “Think about tweeting (write later)” condition ($M = 8.34$; $F(1, 88) = 0.04, p > .80$). There was also no significant difference between how much participants in the
“Think about tweeting” condition thought they “soaked in” the presentation ($M = 8.21$) compared with those in the “Think about tweeting (write later)” condition ($M = 7.97$; $F(1, 88) = 0.21, p > .60$). There was also no significant difference between the average quiz score of participants in the “Think about tweeting” condition ($M = 5.21$) and the average quiz score of those in the “Think about tweeting (write later)” condition ($M = 5.62$; $F(1, 88) = 0.72, p = .40$).

We tested for mediation using the Hayes and Preacher (2011) mediation procedure for multicategorical variables. The difference in enjoyment between participants in the “Think about tweeting (write later)” condition and those in the “No tweeting” condition was significantly mediated by how much participants thought they “soaked in” the presentation; 5,000 bootstrap samples for an indirect effect resulted in a 95% confidence interval with a lower limit of -1.64 and an upper limit of -0.22. Although directionally similar, the difference in enjoyment between participants in the “Think about tweeting” condition and those in the “No tweeting” condition was not found to significantly mediate how much participants thought they “soaked in” the presentation; 5,000 bootstrap samples for an indirect effect resulted in a 90% confidence interval with a lower limit of -1.35 and an upper limit of 0.02.

The difference in enjoyment between participants in the “Think about tweeting” condition and those in the “No tweeting” condition was significantly mediated by participants’ quiz score; 5,000 bootstrap samples for an indirect effect resulted in a 95% confidence interval with a lower limit of -1.54 and an upper limit of -0.09. Although directionally similar, participants’ quiz score was not found to significantly mediate the difference in enjoyment between participants in the “Think about tweeting (write later)” condition and those in the “No tweeting” condition; 5,000 bootstrap samples for an
indirect effect resulted in a 90% confidence interval with a lower limit of -0.90 and an upper limit of 0.01.

5.3.2 Post-experience Intuition

Using one-sample t-tests with a test value of 6 (i.e., no effect), participants in the “No tweeting” condition predicted that tweeting would have had a significantly negative effect on their enjoyment (\(M = 3.92; t(35) = -4.89, p < .001\)). Participants in the “Think about tweeting” condition predicted that actually tweeting would have had no significant effect on their enjoyment (\(M = 5.54; t(27) = -0.63, p > .50\)). Similarly, participants in the “Think about tweeting (write later)” condition predicted that actually tweeting would have had no significant effect on their enjoyment (\(M = 5.17; t(28) = -1.54, p > .10\)). A contrast analysis within an ANOVA testing the effect of condition on this dependent variable reveals that there was a significant difference between the average of participants in the tweeting conditions (\(M = 5.35\)) and those in the “No tweeting” condition (\(M = 3.92; F(1, 90) = 4.65, p < .05\)), indirectly reflecting an accurate estimation of the detrimental effects on enjoyment of simply thinking about tweeting in general compared with not tweeting at all. A contrast analysis within the ANOVA reveals there was no significant difference between tweeting conditions on this dependent variable (\(F(1, 90) = 0.19, p > .60\)).

5.3.3 Prediction Study

Using one-sample t-tests with the actual means of the “No tweeting” condition as test values, the different group of participants who predicted the results of participants who would be encouraged to think about tweets they would write (and not to actually write them) during the presentation in general accurately predicted that these
participants would enjoy their time significantly less (M = 7.69, t(30) = -5.55, p < .001),
would think they “soaked in” the presentation significantly less (M = 7.38, t(30) = -4.37, p < .001),
and would get a significantly lower quiz score (M = 5.39, t(30) = -3.06, p < .01) than those who were not asked to tweet in any way.

5.4 Discussion

Participants in the tweeting conditions, who were encouraged while watching
the presentation to merely think about what “tweets” they would write (without
actually writing them), enjoyed their time during the experience less than those who
were not asked to “tweet” in any way, and results suggest that this effect was driven by
increased mind wandering during the experience, supporting H4. These results help
elucidate the process behind which verbally documenting or reflecting during an
experience can affect experiences, suggesting that merely thinking about what one could
verbal document or reflect on can lead to reduced enjoyment and increased mind
wandering, and adding further support that the physical act of writing out one’s
documentations or reflections is not necessary to lead to these detrimental effects.

Results from the “post-experience intuition” measure and the separate prediction
study suggest that consumers generally have accurate intuition and naïve theories
regarding how merely thinking about tweeting in itself can affect generally very
enjoyable experiences. More specifically, consumers appear to recognize that merely
thinking about tweeting can reduce enjoyment (and increase mind wandering) during
generally very enjoyable experiences, just as they appear to recognize that actually
writing tweets can detrimentally affect generally very enjoyable experiences (as
indicated in experiments 2 and 3).
The next experiment aims to explore verbal documentation and reflection behavior that none of the experiments up until this point has explored: verbally documenting or reflecting right after an experience has ended. More specifically, the experiment tests how encouragement to verbally document or reflect right after an experience has ended may affect consumers’ mind wandering during the experience and enjoyment of their time regarding the experience that had taken place prior to the verbal documentation or reflection. This will allow us to test H5 and further explore the relationship between encouragement to verbally document or reflect, mind wandering, and enjoyment, as well as another possible factor that may play a role in how verbally documenting or reflecting can affect enjoyment: the process of expressive writing. If supported, H5 would indicate potential opportunities for consumers to verbally document or reflect without significant detrimental effects on enjoyment or mind wandering, and potential opportunities for doing so that may actually lead to increased enjoyment.
6. Experiment 5: “Tweeting” After the Experience vs. Not “Tweeting” At All

6.1 Introduction

The results of the first four experiments suggest that while taking part in an experience, encouragement to verbally document or reflect (whether written or merely thought) with the opportunity to do so on any topic can reduce enjoyment of one’s time during the experience, and that this effect is due at least partially to increased mind wandering during the experience. However, when consumers are encouraged to verbally document or reflect just about the experience, the effect on their mind wandering is limited, and so they do not experience the same reduction in their enjoyment. The main purpose of this experiment is to test H5 by exploring alternative ways in which consumers could be encouraged to verbally document or reflect that should not lead to increased mind wandering during an experience, and in the process, explore another possible factor that may play a role in how verbally documenting or reflecting can affect enjoyment: the process of expressive writing. More specifically, this experiment adds new conditions in which participants are encouraged to verbally document or reflect right after an experience, either being asked to do so just about the experience they just took part in or with the opportunity to do so on any other topic, as well. Through these conditions, we can test the hypothesis that encouragement for consumers to verbally document or reflect right after an experience ends just about the experience will lead to increased enjoyment regarding their time during the experience that had just taken place (H5a), while having the opportunity to do so on any topic will not lead to increased enjoyment (H5b).
As discussed, the extant literature on expressive writing has shown that writing about thoughts and feelings regarding experiences one has already taken part in can have positive effects, such as leading to enhanced (or less negative) mood or less anxiety (e.g., Baikie et al. 2012; Burton and King 2004; for a review, see Pennebaker and Chung 2007), and so verbal documentation and reflection (e.g., in the form of “tweeting”) just about an experience could potentially lead to increased enjoyment regarding one’s time during an experience that had just taken place, too. However, mind wandering should not drive this effect, as the opportunity to verbally document or reflect just about an experience (whether to do so during the experience (H3) or right after the experience ends) should not affect mind wandering. Rather, the effect may be driven by the same mechanism(s) behind the effects of expressive writing about a past experience, which, as discussed, are still unclear (e.g., Burton and King 2004; Pennebaker and Chung 2007). When consumers are encouraged to verbally document or reflect right after an experience ends, but have the opportunity to do so on any topic, though, this opportunity should prevent consumers in general from being fully involved in the expressive writing process, and thus prevent them from improving their enjoyment regarding their time during the experience that had just taken place. However, since the verbal documentation or reflection occurs after the experience (and not during the experience), there should still be no increase in mind wandering during the experience.

6.2 Method

6.2.1 Main Experiment

Participants (N = 234) were recruited from Amazon Mechanical Turk’s (mTurk) online subject pool, and paid for their participation. The experimental design was similar to that used in experiment 3, except all tweeting conditions involved participants
verbally documenting or reflecting right after watching the presentation (not during the presentation), and all participants in this experiment watched the Philipp Bagus presentation (Bagus 2011).

In addition to the “No tweeting” condition, there were four conditions in which participants were asked to tweet, which were organized as 2 (Tweeting condition: about anything, only about experience) x 2 (Expected condition: no, yes) conditions. The “Tweet about anything- unexpected” condition was similar to the “Tweet about anything” condition in experiments 1-3, except participants were asked to verbally document or reflect right after watching the presentation, and received the following instructions: “Each of your ‘tweets’ could be about anything: what you are currently doing at the moment, your reflection(s) at the moment, how you are feeling at the moment, something about the presentation you were viewing, whatever.” Participants in the “Tweet about anything- expected” condition received the same instructions, but were also told before watching the presentation that they would be asked to verbally document or reflect right after watching the presentation with these instructions. The “Tweet only about experience- unexpected” condition was similar to the “Tweet only about experience” condition in experiment 3, except participants were asked to verbally document or reflect right after watching the presentation, and received the following instructions: “Each of your ‘tweets’ should be about the presentation you were viewing.” Participants in the “Tweet only about experience- expected” condition received the same instructions, but were also told before watching the presentation that they would be asked to verbally document or reflect right after watching the presentation with these instructions.

In sum, while participants in all tweeting conditions were asked to write at least
10 tweets right after watching the presentation, participants were either asked to tweet just about the presentation or were asked to tweet with the opportunity to do so either about the presentation or about any other topic they wished to tweet about. In addition, participants either first received these instructions right after watching the presentation, or were told about them before watching the presentation. (The “Expected” conditions were included to more broadly operationalize the process behind encouragement to verbally document or reflect right after an experience (i.e., to account for possible variations regarding this process), and we expected similar results between the two conditions (i.e., between the “No” and “Yes” conditions)). While participants in the “No tweeting” condition completed the same main dependent variables used in experiments 1-4 right after watching the presentation, participants in the four tweeting conditions completed these dependent variables right after completing their tweets. Given the timing of the completion of the dependent variables for participants in the tweeting conditions (after completing their tweets, which occurred after watching the presentation), their enjoyment rating regarding their time while watching the presentation served more as a measure of retrospective enjoyment than for those in the “No tweeting” condition, who completed their rating right after watching the presentation.

6.2.2 Post-experience Intuition

After completing the quiz, participants in our main experiment completed the same “post-experience intuition” measure used in experiments 1-3, except participants in the “Tweet about anything” conditions were asked how they think they would have rated their enjoyment of their time while watching the presentation if they could have tweeted just about the presentation (and not about any other topic they may have liked),
and participants in the “Tweet only about experience” conditions were asked how they think they would have rated their enjoyment of their time while watching the presentation if they could have tweeted about any topic they may have liked (and not just about the presentation).

6.2.3 Prediction Study

We also conducted a separate prediction study using the same basic design as that used in experiments 1-3 using a different set of participants on Amazon’s Mechanical Turk (mTurk) online subject pool (N= 119) who were asked about participants in one of the four tweeting conditions.

6.3 Results

6.3.1 Main Experiment

Of the 234 participants who took part in the experiment, a total of 95 participants were removed from the analyses. (87 participants were removed because the timer indicated that they had watched less than the full length of the presentation and eight were removed for having watched the presentation prior to the experiment. The MANOVA analysis below automatically excluded data listwise from two additional participants due to missing cells).

Results of a MANOVA do not reveal any significant main effects of condition on enjoyment rating (p = .11) or how much participants thought they “soaked in” the presentation or quiz score (both p > .70).

To test whether specific types of tweeting right after the experience can differentially affect participants’ enjoyment (namely, whether any effect depended on what topics they had the opportunity to verbally document or reflect on), we ran
contrast analyses within the MANOVA between the average of the “Tweet only about experience” conditions and the “No tweeting” condition, contrast analyses between the average of the “Tweet about anything” conditions and the “No Tweeting” condition, and contrast analyses between the average of the “Tweet about experience” conditions and the average of the “Tweet about anything” conditions (see Figure 8 below for mean ratings and quiz scores with standard error bars for each condition).

![Figure 8: Experiment 5: Ratings and Quiz Score by Condition](image)

Contrast analyses indicate that participants in the “Tweet only about experience” conditions rated enjoying their time while watching the presentation significantly higher ($M = 5.11$) than did those in the “No tweeting” condition ($M = 3.67$; $F(1, 132) = 5.06, p < .05$). However, there was no significant difference between how much participants in the “Tweet only about experience” conditions thought they “soaked in” the presentation ($M = 5.51$) compared with those in the “No tweeting” condition ($M = 4.90$; $F(1, 132) = 1.12, p > .25$). There was also no significant difference between the average quiz score of participants in the “Tweet only about experience” conditions ($M = 3.81$) and the average
quiz score of those in the “No tweeting” condition ($M = 3.73; F(1, 132) = 0.03, p > .80$).

(Contrast analyses between participants in the “Tweet only about experience-unexpected” condition and those in the “Tweet only about experience-expected” condition indicate no significant differences on any of the main dependent variables (all $p > .30$)).

In contrast, contrast analyses indicate that there were no significant differences on the main dependent variables for participants in the “Tweet about anything” conditions and those in the “No Tweeting” condition. More specifically, there was no significant difference between how participants in the “Tweet about anything” conditions rated enjoying their time while watching the presentation ($M = 4.00$) compared with those in the “No tweeting” condition ($M = 3.67; F(1, 132) = 0.33, p > .50$).

There was also no significant difference between how much participants in the “Tweet about anything” conditions thought they “soaked in” the presentation ($M = 5.36$) compared with those in the “No tweeting” condition ($M = 4.90; F(1, 132) = 0.70, p > .40$). There was also no significant difference between the average quiz score of participants in the “Tweet about anything” conditions ($M = 3.68$) and the average quiz score of those in the “No tweeting” condition ($M = 3.73; F(1, 132) = 0.03, p > .80$). (Contrast analyses between participants in the “Tweet about anything-unexpected” condition and those in the “Tweet about anything-expected” condition indicate no significant differences on any of the main dependent variables (all $p > .40$)).

Contrast analyses indicate that participants in the “Tweet only about experience” conditions rated enjoying their time while watching the presentation significantly higher ($M = 5.11$) than did those in the “Tweet about anything” conditions ($M = 4.00; F(1, 132) = 4.12, p < .05$). However, there was no significant difference between how much
participants in the “Tweet only about experience” conditions thought they “soaked in” the presentation \((M = 5.51)\) compared with those in the “Tweet about anything” conditions \((M = 5.36; F(1, 132) = 0.10, p > .70)\). There was also no significant difference between the average quiz score of participants in the “Tweet only about experience” conditions \((M = 3.81)\) and the average quiz score of those in the “Tweet about anything” conditions \((M = 3.68; F(1, 132) = 0.15, p > .60)\).

We also ran contrast analyses within the MANOVA between the average of the “Expected” conditions and those in the “Unexpected” conditions, which indicate that there were no significant differences on the main dependent variables for participants in the “Expected” conditions and those in the “Unexpected” conditions. More specifically, there was no significant difference between how participants in the “Expected” conditions rated enjoying their time while watching the presentation \((M = 4.84)\) compared with those in the “Unexpected” conditions \((M = 4.18; F(1, 132) = 1.43, p > .20)\). There was also no significant difference between how much participants in the “Expected” conditions thought they “soaked in” the presentation \((M = 5.60)\) compared with those in the “Unexpected” condition \((M = 5.28; F(1, 132) = 0.53, p > .40)\). There was also no significant difference between the average quiz score of participants in the “Expected” conditions \((M = 3.54)\) and the average quiz score of those in the “Unexpected” conditions \((M = 3.91; F(1, 132) = 1.03, p > .30)\).

We tested for mediation using the Hayes and Preacher (2011) mediation procedure for multicategorical variables. 95% (and 90%) confidence intervals resulting from 5,000 bootstrap samples indicate that any differences found between conditions in enjoyment were not significantly mediated by how much participants thought they
“soaked in” the experience nor by participants’ quiz score (the lower limit and upper limit of each confidence interval were of the same valence).

6.3.2 Post-experience Intuition

Using one-sample t-tests with a test value of 6 (i.e., no effect), participants in the “No tweeting” condition predicted that tweeting during the experience would have had no significant effect on their enjoyment ($M= 5.75; t(31)= -0.61, p > .50$). Combining participants in the “Tweet about anything” conditions, these participants underestimated the detrimental effect on enjoyment of tweeting right after an experience with the opportunity to do so on any topic compared with being limited to doing so just about the experience, and thought that being asked to tweet just about the experience (instead of about any topic) would have had a significantly negative effect on their rating of how much they enjoyed their time during the experience ($M= 5.43; t(59)= -2.05, p < .05$), the opposite of what actually occurred. Combining participants in the “Tweet only about experience” conditions, these participants also underestimated the detrimental effect on enjoyment of tweeting right after an experience with the opportunity to do so on any topic compared with being limited to doing so just about the experience, and thought that being asked to tweet about any topic (instead of just about the experience) would have had a significantly positive effect on their rating of how much they enjoyed their time during the experience ($M= 6.77; t(46)= 2.62, p < .05$), the opposite of what actually occurred.

6.3.3 Prediction Study

Combining the two different groups of participants who read about either “Tweet only about experience” condition, using one-sample t-tests with the actual
means of the “No tweeting” condition as test values, this group of participants accurately predicted that those in the “Tweet only about experience” conditions would have rated enjoying their time during the experience significantly higher ($M = 4.16$, $t(60) = 2.52, p < .05$) than those who did not tweet. However, this group overpredicted the benefits to mind wandering of tweeting right after an experience only about the experience, predicting that those in the “Tweet only about experience” conditions would think they “soaked in” the presentation significantly more ($M = 5.48$, $t(60) = 2.31, p < .05$) and would have a significantly higher quiz score ($M = 4.52$, $t(60) = 4.31, p < .001$) than those who did not tweet.

Combining the two different groups of participants who read about either “Tweet about anything” condition, using one-sample t-tests with the actual means of the “No tweeting” condition as test values, this group of participants overpredicted the benefits to enjoyment of tweeting right after an experience with the opportunity to do so on any topic, predicting that those in the “Tweet about anything” conditions would have rated enjoying their time during the presentation significantly higher ($M = 4.10$, $t(57) = 2.75, p < .01$) than those who did not tweet. However, this group accurately predicted that those in the “Tweet about anything” condition would not think they “soaked in” the presentation significantly differently ($M = 4.66$, $t(57) = -1.26, p > .20$) and would not have a significantly different quiz score ($M = 3.87$, $t(57) = 0.79, p > .40$) than those who did not tweet.

We also ran a 2 (Tweet condition: about anything, only about experience) X 2 (Expected condition: no, yes) MANOVA including predictions for each tweeting condition from these different groups of participants on all three dependent variables. Results indicate no significant interactions on any of the three dependent variables (all $p$
Results indicate that these different groups of participants underpredicted the detrimental effects on enjoyment of tweeting right after an experience with the opportunity to do so on any topic compared with being limited to doing so just about the experience, predicting that there would be no significant difference between how participants in the “Tweet only about experience” conditions rated enjoying their time during the presentation (M = 4.16) compared with those in the “Tweet about anything” conditions (M = 4.10; F(1, 115) = 0.04, p > .80). These different groups of participants overpredicted the benefits to mind wandering of tweeting right after an experience when limited to doing so just about the experience compared with having the opportunity to do so on any topic, predicting that participants in the “Tweet only about experience” conditions would think they “soaked in” the presentation significantly more (M = 5.48) than those in the “Tweet about anything” conditions (M = 4.66; F(1, 115) = 7.09, p < .01), and predicting that participants in the “Tweet only about experience” conditions would have significantly higher quiz scores (M = 4.52) than those in the “Tweet about anything” conditions (M = 3.87; F(1, 115) = 6.34, p < .05).

Results indicate that these different groups of participants overestimated the benefits of expecting before an experience to be asked to tweet right after the experience ends compared to not expecting this, predicting that participants in the “Expected” conditions would rate enjoying their time during the presentation significantly higher (M = 4.49) than those in the “Unexpected” conditions (M = 3.80; F(1, 115) = 7.80, p < .01), and predicting that participants in the “Expected” conditions would think they “soaked in” the presentation significantly more (M = 5.58) than those in the “Unexpected” conditions (M = 4.62; F(1, 115) = 9.13, p < .01). These different groups of participants
accurately predicted that there would be no significant difference in quiz scores between participants in the “Expected” conditions ($M = 4.40$) and those in the “Unexpected” conditions ($M = 4.02; F(1, 115) = 1.97, p > .15$).

### 6.4 Discussion

The results of experiment 5 suggest that encouragement for consumers to verbally document or reflect right after an experience ends just about the experience can lead to increased enjoyment regarding their time during the experience that had just taken place (supporting H5a). However, this same increased enjoyment does not extend to consumers who are encouraged to verbally document or reflect right after the experience ends with the opportunity to do so on any topic (supporting H5b). Participants in the “Tweet about anything” conditions also had lower enjoyment compared to those who were encouraged to verbally document or reflect right after the experience ended just about the experience. In other words, despite the increased flexibility among participants who had the opportunity to verbally document or reflect about any topic right after the experience ended, this opportunity ultimately led to lower enjoyment compared to those asked to pursue a more limited range of possible behaviors right after the experience ended.

Encouragement to verbally document or reflect did not affect mind wandering during the experience for both sets of tweeting conditions (supporting H5a and H5b). After all, participants were encouraged to verbally document or reflect after the presentation ended, so mind wandering should generally not have been affected during the presentation. While the previous experiments exploring the effects of encouragement to verbally document or reflect during an experience found that changes in enjoyment were driven by changes in mind wandering, the effect on enjoyment of encouragement
to verbally document or reflect in this experiment was not driven by any change in mind wandering (supporting H5a).

What then is to account for the increased enjoyment among participants who were specifically encouraged to verbally document or reflect right after the experience just about the experience? As discussed, the extant literature on expressive writing has shown that writing about thoughts and feelings regarding experiences one has already taken part in can have positive effects, such as leading to enhanced (or less negative) mood or less anxiety (e.g., Baikie et al. 2012; Burton and King 2004; for a review, see Pennebaker and Chung 2007). The beneficial effect on enjoyment that we find for participants who were encouraged to verbally document or reflecting right after the experience just about the experience may be driven by the same mechanism(s) behind the effects of expressive writing about a past experience. Participants who were encouraged to verbally document or reflect right after the experience, but had the opportunity to do so on any topic may not have had the same improvement in enjoyment because their unlimited options regarding what to write about could have prevented them in general from being fully involved in the expressive writing process.

Unfortunately, as discussed, the precise mechanism(s) behind the effects of expressive writing are still unclear (e.g., Burton and King 2004; Pennebaker and Chung 2007), and so it is difficult to pinpoint the precise mechanism(s) behind the effects found in this experiment, as well. From a practical standpoint, though, the results of this experiment suggest at least one way in which encouragement to verbally document or reflect can actually enhance enjoyment: when consumers are encouraged to verbally document or reflect right after an experience just about the experience. The results of this experiment also suggest that encouragement to verbally document or reflect with
the opportunity to do so about any topic does not have to generally detrimentally affect enjoyment, so long as it occurs after the experience is over.

Results from the “post-experience intuition” measure suggest that consumers who took part in an experience do not recognize how encouragement to tweet right after an experience just about the experience vs. having the opportunity to also tweet about other topics may have affected their enjoyment regarding their time during the experience, thinking the opposite of what actually occurs. More specifically, consumers who were encouraged to tweet just about an experience appear to think that having instead had the opportunity to tweet about any topic would have improved their enjoyment, when such an opportunity would have actually had a detrimental effect. Also, consumers who were encouraged to tweet with the opportunity to do so on any topic appear to think that having been limited to tweeting just about the experience would have hurt their enjoyment, when such a limitation would have actually had a positive effect. The separate prediction study suggests that consumers, when predicting in the abstract how tweeting right after an experience can affect enjoyment, inaccurately do not make a distinction between encouragement to tweet just about the experience vs. having the opportunity to also tweet about other topics (at least for generally unenjoyable experiences).
7. General Discussion

Social media and mobile technology now provide consumers with the opportunity to continuously document or reflect on their moment-to-moment internal and external experiences, and an increasing number of consumers (and businesses) seem to be embracing this opportunity. In this paper, we proposed a theoretical model based around the perspective of mind wandering to help explore the process behind documenting or reflecting during or after experiences. More specifically, through the perspective of mind wandering, we explored the effects that written-down verbal documentation or reflection can have on consumers’ enjoyment. Since Twitter provides an opportunity for such verbal documentation or reflection, we used the basic elements of “tweeting” to explore this process.

In line with our theoretical framework, the first four experiments suggest that encouragement to verbally document or reflect during an experience with the opportunity to do so on any topic one would like (as is generally the case in real life) can undermine enjoyment during the experience, whether that experience is generally enjoyable or generally unenjoyable, and that at least for generally very enjoyable experiences, encouragement to merely think about “tweets” one would write can also undermine enjoyment during the experience. Thus, the opportunity to continuously verbally document or reflect on one’s moment-to-moment internal and external experiences may come with significant costs to consumers.

Results suggest that the effect of verbal documentation or reflection on enjoyment is driven by increased mind wandering during the experience, whether measured by a subjective measure (i.e., how much participants think they “soaked in” the experience) or a more objective measure (i.e., a quiz based on the details of the
experience). However, when consumers are asked to “tweet” just about the current
experience, mind wandering is not significantly affected, nor is their enjoyment during
the experience. Thus, the detrimental effects of verbal documentation and reflection
appear to be due to the opportunity to do so about topics other than the current
experience, rather than from the physical act of writing in itself. While experience
sampling studies have shown that people tend to engage in mind wandering anywhere
between almost one-third (e.g., Kane et al. 2007; Klinger 1999) and almost one-half of
their waking life in general (Killingsworth and Gilbert 2010), social media and mobile
technology appear to aid and abet this often deleterious activity by providing consumers
with the opportunity to take them “outside” of the current experience.

However, when verbal documentation or reflection occurs in ways that do not
take consumers “outside” of the current experience, such encouragement may not lead
to the same detrimental effects on consumers’ experiences or may even lead to benefits
to consumers’ enjoyment. In addition to encouraging consumers to verbally document
or reflect during an experience just about the experience (as tested in experiment 3), the
results of experiment 5 suggest that, at least for generally unenjoyable experiences,
encouragement for consumers to verbally document or reflect right after an experience
with the opportunity to do so on any topic does not lead to any detrimental effect on
their mind wandering or enjoyment. Furthermore, the results of experiment 5 suggest
that encouragement for consumers to verbally document or reflect right after an
experience just about the experience will have no effect on mind wandering during the
experience, and actually increase their enjoyment regarding their time during the
experience that had just taken place (which may be due to the same mechanism(s) that
leads expressive writing about past experiences to lead to positive psychological effects
(e.g., Baikie et al. 2012; Burton and King 2004; for a review, see Pennebaker and Chung 2007), which, as discussed, are still unclear (e.g., Burton and King 2004; Pennebaker and Chung 2007)).

In a number of cases, consumers appear to be unaware of the effects that verbal documentation or reflection during an experience can have. The prediction studies that paralleled the main experiments suggest that consumers mistakenly predict (at least for generally moderately enjoyable and generally unenjoyable experiences) that “tweeting” will not negatively affect enjoyment. Similarly, the post-experience intuition question in the main experiments suggests that consumers may not recognize after an experience ends (again, at least for generally moderately enjoyable and generally unenjoyable experiences) how having “tweeted” actually hurt their enjoyment, although those asked not to tweet recognize how “tweeting” could have hurt their enjoyment. While consumers recognize the detrimental effects that encouragement to “tweet” with the opportunity to do so on any topic during a generally very enjoyable experience can have, they mistakenly think that encouragement to do so just about the experience will lead to the same detrimental effects.

Consumers also appear to have inaccurate lay theories or mispredictions regarding how verbal documentation or reflection right after an experience ends can affect enjoyment regarding their time during the experience that had just taken place (at least for generally unenjoyable experiences). More specifically, consumers encouraged to “tweet” right after an experience ends with the opportunity to do so on any topic mistakenly think that having instead been encouraged to do so just about the experience would have hurt their enjoyment. Similarly, consumers encouraged to “tweet” right after an experience ends just about the experience mistakenly think that having instead
had the opportunity to do so on any topic would have helped their enjoyment. Also, consumers making predictions about “tweeting” by others in the abstract mistakenly do not make a distinction between encouragement to “tweet” with the opportunity to do so on any topic and encouragement to “tweet” just about the experience, thinking that both lead to the same beneficial effect on enjoyment. (See Tables 1 and 2 below for a condensed summary of results regarding enjoyment (actual and predicted) across experiments. For a complete list of results and more information regarding the results, see the appropriate experiment results subsection).
<table>
<thead>
<tr>
<th>Main experiment</th>
<th>Results regarding enjoyment</th>
<th>Post-experience intuition: “No tweeting” conditions (Accurate= 1, Inaccurate= 0)</th>
<th>Post-experience intuition: “Tweeting” conditions</th>
<th>Prediction study regarding “Tweeting” conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experiment 1:</td>
<td>H1: “Tweeting” &lt; “No tweeting”</td>
<td>1</td>
<td>0</td>
<td>0</td>
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<td>“Tweeting” during moderately enjoyable experience</td>
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<td>Experiment 2:</td>
<td>H1</td>
<td>1</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Unenjoyable experience</td>
<td></td>
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<tr>
<td>Experiments 2 and 3:</td>
<td>H1</td>
<td>1</td>
<td>1</td>
<td>1</td>
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<tr>
<td>Very enjoyable experience</td>
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<tr>
<td>Experiment 4:</td>
<td>H4: “Think about tweeting” &lt; “No tweeting” (As suggested indirectly through comparisons between post-experience intuitions)</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Very enjoyable experience</td>
<td></td>
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Table 2: Condensed Summary of Enjoyment (Actual Results and Predicted) Across Experiments for “Tweet About Anything” Conditions vs. “Tweet Only About Experience” Conditions

<table>
<thead>
<tr>
<th>Main experiment</th>
<th>Results regarding enjoyment</th>
<th>Post-experience intuition: “Tweet about anything” conditions (Accurate= 1, Inaccurate= 0)</th>
<th>Post-experience intuition: “Tweet only about experience” conditions</th>
<th>Prediction study regarding “Tweet about anything” conditions</th>
<th>Prediction study regarding “Tweet only about experience” conditions</th>
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<tr>
<td>Experiment 3:</td>
<td></td>
<td>0 (As suggested indirectly through comparisons between post-experience intuitions)</td>
<td>0 (As suggested indirectly through comparisons between predictions)</td>
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<td></td>
</tr>
<tr>
<td>“Tweeting” during very enjoyable experience</td>
<td>“Tweet about anything” &lt; “Tweet only about experience”</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Experiment 5:</td>
<td>Same</td>
<td>0 (thought opposite)</td>
<td>0 (thought opposite)</td>
<td>0</td>
<td>(As suggested indirectly through comparisons between predictions)</td>
</tr>
<tr>
<td>“Tweeting” after very enjoyable experience</td>
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7.1 Theoretical Contributions

7.1.1 Mind Wandering

The main theoretical contributions made by the theoretical model presented in this paper (and the results of the experiments that support it) regard the literature on mind wandering (e.g., Killingsworth and Gilbert 2010; Schooler et al. 2011). First, the model shows how, when, and why verbally documenting or reflecting during an experience (e.g., through “tweeting” or even merely thinking about doing so) can, perhaps ironically, increase mind wandering during the experience in terms of both a subjective awareness of it and more objectively, as well. Second, the model adds to the
literature on the detrimental effects of mind wandering by showing that mind wandering can not only affect memory (e.g., Risko et al. 2011), general happiness (e.g., Killingworth and Gilbert 2010), and performance (e.g., Smallwood et al. 2007), but also the enjoyment of one’s time during that experience.

7.1.2 Choice Overload

The model presented in this paper also contributes to the literature on choice overload (e.g., Iyengar and Lepper 2000; Sethi-Iyengar et al. 2004). Many studies have shown that having too many options to select between can lead to a number of detrimental effects, such as being less likely to make a choice and being less satisfied with the selection one ultimately makes (e.g., Iyengar and Lepper 2000). Such studies typically involve consumers choosing among different material items to purchase or select. The results of the experiments presented in this paper suggest that having too many options of thoughts or feelings to verbally document or reflect upon (e.g., the current experience, as well as any other topic besides just the current experience) can lead to detrimental effects, such as reduced enjoyment of one’s time, as well. In other words, limiting the choice set of what one can document or reflect upon (at least when limited to documentation and reflections regarding an experience) may be beneficial for consumers.

7.1.3 Cognitive Responses

Verbal documentation and reflection (e.g., through “tweeting”) may function in a similar way to written-down on-line cognitive responses, which are thoughts and ideas elicited by external stimuli, such as advertisements and other persuasive messages (e.g., Briñol 2004, Shavitt and Brock 1986). The traditional method often used to measure
cognitive responses is the thought-listing technique, in which participants who view, say, a persuasive message, simply list their thoughts and ideas (whether about the persuasive message or not), and are often asked to do so while they view the persuasive message (e.g., Briñol 2004). The cognitive response literature traditionally measures “net affect” in terms of positively valenced minus negatively valenced responses written by participants related to the stimulus at hand (divided by the total number of responses or not), and finds that the “net affect” of responses positively predicts attitude towards the stimulus in general (e.g., Petty et al. 2002).

The cognitive response literature does not appear to traditionally explore responses not about the stimulus at hand. Also, we know of no studies in the cognitive response literature that have explored whether the process of being asked to write down one’s cognitive responses in itself may affect attitudes towards the stimulus. The results of the experiments presented in this paper suggest that the opportunity for participants to write down cognitive responses not about the stimulus at hand may negatively affect attitudes towards the stimulus (the results of the experiments presented in this paper do not suggest that the relationship between the “net affect” of responses related to the stimulus at hand and attitude towards the stimulus is affected by this opportunity, though). Thus, our findings may suggest that participants writing on-line cognitive responses may generally have a more negative attitude towards the stimulus simply as a result of the method used (i.e., compared to if there would be a group of participants who would not write down their cognitive responses and simply process the stimulus in a more natural fashion without any instructions). Similarly, if researchers studying written-down on-line cognitive responses would like participants’ general attitudes toward the stimulus to not potentially be affected by the study design in itself, our
findings suggest that they should perhaps ask participants to write down just their thoughts and ideas related to the stimulus at hand.

7.1.4 Expressive Writing

As discussed, the extant literature on expressive writing has shown that writing about one’s thoughts and feelings regarding experiences one has already taken part in—whether the experience is positive, intensely positive, negative, or traumatic—can have positive effects, such as leading to enhanced (or less negative) mood or less anxiety (e.g., Baikie et al. 2012; Burton and King 2004; Burton and King 2008; for a review, see Pennebaker and Chung 2007), and positive effects (at least on physical health) have been shown to occur even from just two minutes of expressive writing at a time (Burton and King 2008). Verbally documenting or reflecting right after an experience ends about that experience may share many similarities with expressive writing. The results of our fifth experiment suggest that expressive writing not only can lead to the aforementioned benefits, but may also lead to increased enjoyment regarding one’s time during experiences, as well. Furthermore, these results suggest that the benefits of expressive writing can also result when the writing occurs right after an experience has ended (but not during an experience).

7.2 Implications for Consumers

Many consumers now live in a society in which encouragement to document or reflect, verbally or otherwise, is present at many moments throughout their day, and these moments only seem to be increasing. The results of the experiments presented in this paper suggest that if consumers’ goals are to enjoy their time during a particular experience (and/or remember the details of it), they should try to resist continuously
verbally documenting or reflecting on their moment-to-moment internal and external experience (such as through the use of social media like Twitter), or, if they do verbally document or reflect, they should try to prevent having the opportunity to do so regarding content unrelated to the current experience. In other words, consumers should try not to use social media in such a way that it takes them “outside” of the current experience (and should realize that even thinking about how they would do so could undermine their experience).

Unfortunately, during most real-world experiences, consumers have the ability to verbally document or reflect at any moment about any topic they would like, as restrictions (at least in terms of what consumers can write about) will seldom be placed on them, let alone enforced, by any external force. Thus, in most experiences consumers find themselves in—many of which may include encouragement by external forces, such as businesses or organizations, to use social media like Twitter—they should try to precommit to self-imposed constraints (e.g., Ariely and Wertenbroch 2002) that would prevent themselves from having the option of, say, tweeting about topics other than the current experience. Ideally, consumers should also try to precommit to self-imposed constraints that would prevent themselves from having the option of tweeting during an experience so that they could wait to tweet until right after the experience ends, since doing so may actually improve their enjoyment regarding their time during the experience.

In general, participants in the experiments presented in this paper were unaware of the detrimental effect that verbally documenting or reflecting during generally unenjoyable and generally moderately enjoyable experiences had on their enjoyment. After taking part in an experience, consumers should recognize how their enjoyment
and level of mind wandering may have been affected by their tweeting behavior, and perhaps try their best to use this information to inform their future consumer decision-making (e.g., whether or not to repeat that experience or a similar one), whether or not they recommend the experience to others, and in cases in which it may be important, their awareness of what level of detail of the experience they truly “soaked in” (e.g., if the experience was a lecture including details they could be tested on in the future).

7.3 Implications for Marketing Managers

As discussed, many business and organizations seem to be increasingly likely to embrace and encourage the use of social media during the experiences that they create or are associated with, such as television networks that encourage viewers to tweet while watching their programs (Itzkoff 2011), and many live event leaders and creators encourage “live tweeting” among the audience physically present at their events, too, sometimes even designing “tweet seats” specifically for such activities (e.g., Rose 2011). In general, businesses and organizations naturally will often have a desire for consumers to feel involved in the experiences that they create or are associated with, and to help spread word-of-mouth to potential future consumers, which is free advertising for that business or organization. Encouraging consumers to use social media like Twitter during an experience may help lead to these benefits. However, this research suggests that there may be a trade-off between these potential benefits and the potential costs of reduced enjoyment (and increased mind wandering) among consumers present during the experience.

Thus, businesses should consider these trade-offs and decide when it may be in their best interest to encourage the use of social media like “live tweeting” during their experiences and when it may not be- that is, when they prioritize spreading word-of
mouth to potential future consumers vs. when they prioritize the quality of the experience for those present during the experience. For instance, businesses or organizations may prefer to be more (vs. less) encouraging of the use of social media like “live tweeting” during their experiences the lower their general brand awareness or visibility, the lower the ratio of the number of consumers present during the experience to potential future consumers (who could read the messages by the present consumers), and the lower the likelihood of “repeat visits” by consumers present during the experience. The use of social media like “live tweeting” should perhaps be less (vs. more) encouraged the higher the priority on educating those present during the experience (e.g., in classroom settings).

Unfortunately for marketing managers, when the priority is on the quality of the experience for consumers present during an experience, it obviously could be costly (if not often impossible) to prevent consumers who wish to tweet during an experience associated with their brand from doing so. So what is a marketing department to do? One possibility might be to discourage the use of social media and mobile devices by referring to how it could be distracting to others taking part in the experience, although this would generally only apply to live events in which consumers are physically proximate to other consumers whom they may be concerned about offending. Another possibility might be to simply discourage the use of social media and mobile devices during experiences by telling consumers that it may detract from their own enjoyment of their time during the experience (although the results of the post-experience intuition question in our experiments and separate parallel prediction studies suggest that except for generally very enjoyable experiences, consumers may be skeptical of this admonition).
If an organization does have “live tweeting” during its event, though, it should try to encourage tweeting exclusively about the experience. One strategy to take may be to provide a “hashtag” for the experience (e.g., #ACR2011) so that consumers will be encouraged to tweet just about the experience at hand. To the extent that consumers do not tweet about topics other than the experience, there should be no significant detrimental effect on their enjoyment, and so the tweets written during the experience should generally only benefit the brand associated with the experience through free advertising.

To the extent that it is possible, at least for certain experiences, marketing managers ideally should encourage consumers of experiences they create or are associated with to wait until right after the experience is completed to tweet about the experience so as to maximize consumers’ enjoyment regarding their time during the experience, and, presumably, their likelihood of recommending the experience to others or engaging in a similar experience associated with that brand again. Even if attempts to limit consumers to tweet just about the experience (e.g., “hashtags,” warnings) do not work, if consumers wait until right after the experience ends to tweet, there should be no detrimental effect on their enjoyment, and so the tweets written about the experience should generally only benefit the brand associated with the experience again through free advertising.

7.4 Remaining Questions and Future Research

Given how verbally documenting or reflecting in general during an experience was shown to reduce consumers’ enjoyment of their time during the experience, why are 62% of online-connected adults worldwide now using some form of social media
(Ipsos 2012), and why has the average total number of tweets sent out each day
increased from 2 million in 2009 (Bennett 2011) to 400 million in 2012 (D’Orazio 2012)?

Consumers may gain utility from the social aspects of social media, such as
helping to satisfy the need to relate (Hoffman and Novak 2012). The experiments
presented in this paper did not incorporate the social aspects of tweeting (other than
participants potentially thinking about how their “tweets” might be read by the
researchers). While social media may not always be very “social” (e.g., a 2010 Sysomos
survey found that 71% of tweets on Twitter never receive any reply or “retweet” at all,
and only 1.5% of those that receive at least one reply or “retweet” receive three or more
(Sysomos 2010)), effects from the verbal documentation or reflection process that
incorporate the potential for social aspects should be explored in future studies.

Consumers may also gain other forms of utility regarding enjoyment from
tweeting during experiences. For instance, perhaps any moment during an experience
that a consumer tweets is generally more enjoyable than that moment would have been
without tweeting (like a shot of dopamine), even if such opportunities may ultimately
contribute to undermining the overall enjoyment of one’s time during the experience.

In regards to the overall enjoyment of consumers’ time during an experience,
though, we have shown that, in a number of cases, consumers do not make accurate
predictions regarding how tweeting during an experience will affect enjoyment, or
recognize how tweeting during an experience they just took part in actually
detrimentally affected their enjoyment. Thus, one potential factor regarding why many
consumers throughout the world may tweet during certain experiences, even if doing so
hurts their enjoyment, may be that they simply erroneously predict that doing so will
not hurt their enjoyment, or they may not recognize after an experience ends how
having tweeted actually hurt their enjoyment. In sum, while verbally documenting or reflecting during an experience has been shown to generally reduce enjoyment of one’s time during the experience, consumers throughout the world may be tweeting at increasing rates simply because of affective misforecasting (e.g., Gilbert et al. 1998; Patrick et al. 2007) and/or they may be gaining some other form of utility in the process. Future studies should explore these other potential sources of utility.

Future studies should also explore how the detrimental effects of verbal documentation or reflection during consumer experiences can directly affect consumer behavior and decision-making. For instance, when consumers tweet during an experience set up by or associated with a particular brand, does the reduction in enjoyment lead consumers to be less likely to take part in another experience set up by or associated with that brand? Does the reduced enjoyment lead consumers to be less likely to recommend the experience (or the brand in general) to others? Alternatively, when consumers are encouraged to tweet right after an experience ends just about that experience, does this have opposite downstream consequences on consumer behavior and decision-making?

Future studies should also explore how verbally documenting or reflecting during an experience can affect other consumers. For instance, to what extent can one accurately predict how much another individual enjoyed his or her time during the experience by the tweets he or she writes during the experience? Would more tweets about topics other than the experience the writer was taking part in reduce how much the reader thinks the writer was enjoying his or her time during the experience? Also, could one consumer’s tweeting reduce the enjoyment for others taking part in the same experience that witness the physical act of tweeting (if not the actual content)? In cases in
which each individual’s activity directly contributes to the experience (e.g., at a party),
the enjoyment of others may be reduced because the tweeting consumer will likely be
less active in the experience itself, at least during the specific moments that consumer is
tweeting. However, it is possible that the tweeting consumer may undermine others’
enjoyment even in cases in which that individual is completely unnecessary to the
functioning of the overarching experience (e.g., an unknown audience member at a
movie theater while the movie is playing). For instance, in such cases, the tweeting
consumer may hurt the enjoyment of others’ time during the experience not only by
potentially “signaling” boredom, but by simply reminding others that there are other
topics they could be thinking about (and documenting or reflecting on) besides the
current experience. Thus, tweeting during an experience can reduce the writer’s
enjoyment, and perhaps seeing someone else tweeting can undermine one’s experience
through a similar process.

Future studies could also test whether the effects of written-down verbal
documentation and reflection presented in this paper extend to verbal documentation
and reflection delivered orally. Also, future studies could explore whether the effects
generalize to other forms of documentation and reflection that could occur during
experiences, such as through photo taking.

Future studies should also explore the precise mechanism(s) behind the positive
effect that encouragement for consumers to verbally document or reflect right after an
experience just about the experience can have on their enjoyment regarding their time
during the experience. Such explorations could not only potentially contribute to the
literature on expressive writing (e.g., Burton and King 2004, Pennebaker 1997), but
pinpointing the precise mechanism(s) involved in the process, if possible, could
potentially also lead to discovering and understanding other ways in which consumers
can verbally document or reflect that could benefit the experiences that they take part in.

7.5 Conclusion

This paper has shown through a theoretical model how, when, and why verbally
documenting or reflecting may have some significant deleterious effects on consumers’
experiences, but that, depending on what consumers do with such an opportunity, these
same effects may not occur, or may even lead to positive effects. As an increasing
percentage of the world begins to incorporate social media and mobile technology into
their daily lives, how best to use this powerful combination is likely to become
increasingly important not only theoretically, but also for the welfare of consumers and
marketers alike.
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Biography

Jared Evan Wolfe was born on September 7, 1984 in New York City. He received a BS with Honors in Human Development from Cornell University in 2006. He will graduate with a Doctor of Philosophy in Business Administration (Marketing) from Duke University in 2013. His current research focus is on the utility that consumers gain from the experiences they take part in; more specifically, what kinds of utility consumers prefer to gain, and how consumers can maximize the utility that they gain. He is co-author of the article, “The Form and Function of Attachment Behavior in the Daily Lives of Young Adults.”