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Generating Content Increases Enjoyment by Immersing Consumers and Accelerating Perceived Time

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Abstract

Advances in technology, particularly smartphones, have unlocked new opportunities for consumers to generate content about experiences while they unfold (e.g., by texting, posting to social media, writing notes), and this behavior has become nearly ubiquitous. The present research examines the effects of generating content during ongoing experiences. Across nine studies, the authors show that generating content during an experience increases feelings of immersion and makes time feel like it is passing more quickly, which in turn enhances enjoyment of the experience. The authors investigate these effects across a broad array of experiences both inside and outside the lab that vary in duration from a few minutes to several hours, including positive and negative videos and real-life holiday celebrations. They conclude with several studies testing marketing interventions that increase content creation and find that consumers who are incentivized or motivated by social norms to generate content reap the same experiential benefits as those who create content organically. These findings illustrate how leveraging content creation to improve experiences can mutually benefit marketers and consumers.

Thanks to advances in technology—particularly smartphones—consumers now have continuous access to messaging services, social media platforms, and a myriad of applications that allow them to communicate their thoughts at almost any time. Consumers are taking full advantage of these tools: the average American spends about two hours per day using social media on their mobile devices alone (Curtin 2018). This connectivity has important implications for the way consumers experience events: consumers are increasingly inspired to generate content by remarking on what they are currently doing, hearing, and seeing *as experiences unfold*, providing a real-time record of their perceptions, thoughts, and feelings.

Indeed, marketers are spending significant resources to encourage this behavior, pushing consumers to communicate about events they are experiencing. For example, firms provide branded hashtags for consumers to use during their consumption experiences, restaurants and hotels offer promotions and rewards to consumers who immediately post about their meal or stay, and event organizers provide customized platforms through apps like Whova and FestApp that allow attendees to communicate with each other during the event. Not surprisingly, industry evidence confirms that content creation during

experiences is extremely prevalent. For instance, an estimated 70% of travelers update their Facebook status while on vacation, and 48% "check in" to locations to report what they are currently doing at least once during their trip (Smart Insights 2017). Furthermore, research by Eventbrite found that over ten million social media posts were created during the 50 most popular events between July 2013 and July 2014 (Grate 2016).

Despite the pervasiveness of content generation during a wide range of experiences, it is unclear how it actually affects consumers. Is creating all this content preventing consumers from enjoying their experiences, or does it enhance their experiences in some way? Countless voices in the popular media have urged consumers to put down their phones and live in the moment (Livers 2016; Passage 2015), implying that generating content undermines their ability to be fully immersed in their experiences. Indeed, some streams of research suggest that content creation could pull consumers out

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of the experience at hand (e.g., Ward et al. 2017; Wood et al. 2012). However, the frequency and persistence of this behavior suggests that it might actually benefit consumers. After all, if generating content was wholly detrimental to experiential enjoyment, consumers should be able to learn that this is the case and do it less over time.

In this article, we systematically examine the effect of this increasingly prevalent behavior on consumers' experiences. We demonstrate that rather than undermining the experience, generating content by commenting on an event as it unfolds can lead consumers to feel more immersed and to enjoy that event more. We also test specific marketing strategies that firms can use to encourage this behavior and thus reap the associated benefits.

How Technology Affects Experiences

In the current research, we examine how generating content affects consumer immersion, which we define as feelings of engagement and presence in an ongoing experience (Diehl, Zauberman, and Barasch 2016; Jennett et al. 2008).[1] Immersion is marked by a heightened level of absorption and a sense of "losing" oneself in an experience (Almasi and McKeown 1996; Escalas 2007; Green and Brock 2000). Conceptually, immersion can be thought of as a precursor to "flow" or a continuum whose endpoint is a flow state, the most extreme level of absorption in an activity that can be achieved (Csikszentmihalyi 1990; Jennett et al. 2008). Although flow states have often been studied in the context of work experiences, prior research has found that flow (Csikszentmihalyi and LeFevre 1989; Mannell, Zuzanek, and Larson 1988) and immersive states (Jennett et al. 2008; Wood, Griffiths, and Parke 2007) also emerge during leisure experiences, such as watching TV, socializing, and playing video games.[2]

When immersed, consumers feel more engrossed in an experience and less connected to the world outside of it. Indeed, a common by-product of immersion is a lack of temporal awareness and altered perceptions of time. When in a state of immersion (and at the extreme, during an actual flow state), consumers report losing the sense that time is passing and are often surprised to discover how long they have spent performing an activity (Csikszentmihalyi 1990; Jennett et al. 2008; Wood, Griffiths, and Parke 2007). Importantly, there is widespread agreement within this literature regarding the indicators that characterize experiential immersion. However,

existing evidence on how content generation might affect immersion is limited and decidedly mixed.

One influential stream of research suggests that content generation technology may inhibit feelings of immersion by making consumers too aware of the world outside of the experience. For instance, prior research has found that the mere presence of smartphones, laptops, and tablets remind consumers of their constant social connectivity and continuous access to information (Dwyer, Kushlev, and Dunn 2017; Przybylski and Weinstein 2013; Thornton et al. 2014; Ward et al. 2017). Thus, using technology to generate content may prevent consumers from becoming absorbed in an experience if they instead feel more connected to external factors. Moreover, consumers often use their devices to multitask (i.e., perform activities that are separate from the current experience; Hembrooke and Gay 2003; Sana, Weston, and Cepeda 2013), and this has been shown to harm performance on the focal activity (Bowman et al. 2010; Goundar 2014; Offer and Schneider 2011; Wood et al. 2012). In addition to undermining people's abilities to perform well on specific tasks, technology has been found to diminish certain social outcomes. Namely, consumers often initiate virtual interactions that conflict with ongoing in-person communications (for a review, see Sbarra, Briskin, and Slachter 2019). Therefore, this prior research suggests that using technology to generate content during an experience may cause consumers to feel more present in the outside world, thus reducing their ability to become fully immersed in their current experience.

However, these detrimental effects were documented under specific experimental conditions in which participants used technology to pursue goals that conflicted with the task at hand. But of course, this is not always the case. Consumers regularly use technology to record or share their perceptions, thoughts, and feelings about the focal experience itself. Indeed, technological devices now provide continuous access to note-taking applications, messaging services, and social media platforms that enable consumers to generate content in ways that are integral or complementary to their experiences.

Importantly, multiple streams of research across a wide range of contexts support the idea that remarking on an ongoing experience to oneself or others can actually increase immersion. For instance, classroom discussions tend to increase students' immersion in the topic at hand (Rocca 2010; Wu et al. 2013), discussing politics has been found to increase interest and subsequent engaged participation in political issues (Campbell 2008; Kwak et al. 2005), and literary conversations can lead people to read relevant material more deeply (Almasi and McKeown 1996; Kim 2004). Interestingly, prior research also indicates that these benefits are not limited to back-and-forth conversations. Simply expressing one's thoughts while reading a novel or watching television (e.g., yelling to a character to "watch out behind you!") is associated with greater immersion in the consumed media (Bezdek, Foy, and Gerrig 2013; Gerrig and Jacovina 2009), whereas inhibiting these reactions can undermine immersion (Gross and Levenson 1997). Indeed, freely expressing such emotional reactions is

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[1] Marketing practitioners and researchers often define "engagement" in terms of objective consumer behaviors, such as interacting with or sharing firm-generated content (e.g., Kumar and Pansari 2016). In contrast, our usage of "engagement" refers to a psychological state: the subjective feeling of immersion or absorption in an experience.

[2] While one common indicator of flow is a balance between the demands of an activity and the skills required to meet them, other indicators of flow (which may be more relevant to leisure) include the sensation that one is an active (vs. passive) part of an experience, heightened involvement, and loss of self-consciousness (Havitz and Mannell 2005; Mannell, Zuzanek, and Larson 1988).

integral to feeling fully present and "in the moment" (Meier, Noll, and Molokwu 2017).

Thus, this prior research suggests that communicating one's thoughts by generating content about an ongoing experience may actually increase rather than inhibit consumers' feelings of immersion. As such, we propose that content generation may represent one domain in which using technology during an experience is actually beneficial for consumers, both in terms of immersion and its potential downstream effect on enjoyment.

Effect on Enjoyment

We also examine the effect of content generation on enjoyment, an outcome of particular importance to marketers. Although consumers' immersion may in itself be of interest, firms invest substantial resources to create experiences that maximize enjoyment (Lemon and Verhoef 2016; Pine and Gilmore 1999; Schmitt 1999). Importantly, consumers who enjoy themselves more are also more likely to exhibit brand loyalty (Chitturi, Raghunathan, and Mahajantes 2008), take part in similar experiences in the future (Wirtz et al. 2003), and share positive word of mouth (Barasch, Zauberman, and Diehl 2018; Ha and Im 2012; Ladhari 2007). Thus, investigating how content generation influences enjoyment has important implications for firms.

Prior research suggests that greater immersion in an ongoing experience may enhance enjoyment of that experience. First, being highly immersed is typically reported to be inherently pleasurable (Jennett et al. 2008). Immersion also tends to increase interest, emotional involvement, and enthusiasm for the activity at hand (Wu et al. 2013), as well as consumer motivation and persistence (Ainley, Hidi, and Berndorff 2002). Furthermore, prior research has found that feeling present and engaged in positive experiences increases enjoyment (Diehl, Zauberman, and Barasch 2016; Meier, Noll, and Molokwu 2017), whereas mind-wandering is associated with reduced happiness from experiences (Killingsworth and Gilbert 2010; Quoidbach et al. 2010). In fact, immersion in a video game is considered a critical precursor to enjoyment of that game (Jennett et al. 2008; Weibel and Wissmath 2011), highlighting the importance of this conceptual relationship.

Increased immersion may also lead to greater enjoyment indirectly as the result of immersion's effect on time perception. That is, immersion often leads to the perception that time is passing more quickly, which itself is closely linked to enjoyment (Sackett et al. 2010). Indeed, enjoyment and accelerated time perception tend to go hand-in-hand: positive experiences are perceived to be shorter (Conti 2001), and perceiving time as passing more quickly increases enjoyment of a task (Gable and Poole 2012; Sackett et al. 2010). Conversely, perceiving time as passing more slowly is associated with feelings of boredom (Zakay 2014). Consistent with lay beliefs that "time flies when you're having fun," positive affect speeds up the perceived passage of time, whereas negative affect slows time perception

(Angrilli et al. 1997; Droit-Volet, Brunot, and Niedenthal 2004; Noulhiane et al. 2007).

Thus, ample evidence suggests that greater immersion, and the acceleration of time perception that typically ensues, are both associated with greater enjoyment during experiences. Accordingly, we predict that by increasing immersion, content generation will also enhance consumer enjoyment both directly and indirectly through time perception.

The Current Research

We report results from nine studies that test our hypotheses. First, two pilot studies document the prevalence of content creation during two different types of experiences—a music festival and a television show—by examining real social media posts on Twitter. We find that consumers predominately generate content about these experiences while they are unfolding rather than before they start or after they end.

Our main studies then test the effect of generating content during an experience on immersion and enjoyment. Across these studies, we assess both the direct effect of immersion on enjoyment and its indirect effect through time perception, whereby greater immersion leads to the perception that time is passing more quickly and thereby increases enjoyment. Studies 1a and 1b document the basic effect of generating content, finding that it increases immersion relative to not generating content. This effect is robust to the valence of the experience: Consumers feel more immersed when they generate content during both a positive (Study 1a) and a negative experience (Study 1b). Moreover, we find that generating content uniquely increases enjoyment of positive (but not negative) experiences. We also provide evidence for our proposed process through mediation, whereby content generation has an indirect effect on enjoyment through increased immersion and accelerated time perception.

Then, Study 2 tests this effect during a real consumer experience outside the lab: the Super Bowl halftime show. Participants in this study were able to generate content in whatever manner they wished (e.g., text messages, social media posts), allowing us to also examine the effects of natural content creation behaviors. This study again demonstrates that generating content increases immersion, accelerates time, and enhances enjoyment.

To further examine natural, externally valid content creation, Study 3 tests the effect of self-selected content creation during participants' Thanksgiving holiday celebrations. Extending the previous findings to a longer experience spanning several hours, participants who generate content during their celebrations feel more immersed and enjoy their experience more.

The final three studies test whether the benefits of generating content manifest even when consumers perform this behavior as the result of firm actions. First, Studies 4a and 4b examine the effects of incentivizing content creation. In line with research demonstrating that financial rewards can promote a variety of consumer behaviors, including exercising

(Charness and Gneezy 2009), recycling (Maki et al. 2016), and the adoption of hybrid cars (Gallagher and Muehlegger 2011), tying an incentive to content generation significantly increases rates of this behavior—both for a positive dance performance (Study 4a) and a suspenseful horror film (Study 4b). More importantly, even when consumers decide to generate content as the result of an incentive, they still feel more immersed and enjoy positive (but not negative) experiences more than those who do not generate content. Second, Study 5 examines a nonfinancial intervention for encouraging content creation: providing consumers with information about descriptive social norms surrounding the behavior. Consistent with prior research demonstrating that informing consumers about the high frequency of a particular behavior can prompt them to adopt that behavior (Demarque et al. 2015; Goldstein, Cialdini, and Griskevicius 2008; Schultz, Khazian, and Zaleski 2008), we find that highlighting a "high" norm (i.e., that most consumers create content) increases content creation compared to highlighting a "low" norm (i.e., that few consumers create content). Moreover, encouraging content creation with this strategy still leads to subsequent enhancements in consumers' immersion and enjoyment. Together, these results demonstrate how marketers can use these various strategies to improve consumer experiences.

Pilot Studies A and B: Twitter Data

The purpose of the pilot studies was to test whether consumers predominately generate content while experiences are unfolding (vs. before or after the experience) and whether this is robust to different types of experiences. As such, two data sets were compiled from twitter.com to investigate tweets posted about (1) a music festival experience and (2) a television experience.

Pilot Study A: Coachella Music Festival

Method. We collected tweets posted in English about the 2019 Coachella Music festival using a Twitter scraper, which provides a random subset of tweets for a particular hashtag (per twitter.com's terms of use). The scraper was set to collect tweets containing the hashtag "#coachella" between Saturday, April 8, 2019, and Thursday, April 18, 2019, where the first weekend of the festival took place from April 12–14, 2019. This yielded a sample of 812 tweets posted across the four days prior to the start of the festival ("before"), the three days corresponding to the festival ("during"), and the four days following the festival ("after").

Results. We found that 70.07% (569/812) of the tweets about Coachella were posted during the actual event, whereas only 8.13% (66/812) were posted prior to the event, and the remaining 21.80% (177/812) were posted following the event ($\chi^2(2) = 516.00$, $p < .001$). That is, even though the actual festival experience constituted the smallest portion of observed time

(27.27%), the majority of the tweets about the event occurred during the experience.

While it is interesting that consumers disproportionately posted content during the experience, music festivals tend to have many breaks between performances. Thus, consumers may have chosen to generate content during moments of "downtime" and not necessarily during the concerts themselves. Thus, to provide more direct evidence that consumers create content as experiences unfold, we also examined an experience that lacked such breaks: the series finale of HBO's *Game of Thrones*—a television show without commercial interruptions.

Pilot Study B: Game of Thrones Series Finale

Method. We scraped tweets containing the hashtags #GOT and/or #GameOfThrones occurring within six hours of the final episode, which aired from 6:00 P.M.–7:30 P.M. PT on May 19, 2019. This yielded a random sample of 950 tweets posted across the six hours prior to the start of the episode ("before"), the 1.5 hours corresponding to the episode's airtime ("during"), and the six hours following the end of the episode ("after").

Results. We found that 45.26% (430/950) of the tweets about *Game of Thrones* took place during the experience, whereas 13.16% (125/950) took place prior to the experience, and the remaining 41.58% (395/950) took place following the experience ($\chi^2(2) = 187.79$, $p < .001$). Note that the data span 13.5 hours, with only 1.5 hours classified as "during the experience." That is, a high percentage of tweets were posted about the finale episode during just 11.11% of the observation period. Thus, even in the case of an immensely anticipated TV episode without commercial breaks, consumers generated a large amount of content during the unfolding experience.

Discussion of Pilot Studies A and B

These pilot studies document the prevalence of content creation behavior during actual experiences using data from a popular social media site. For two experiences that are different on multiple dimensions (e.g., length, physical activity, consumer base), we found that consumers create a great deal of content during (vs. before or after) the unfolding events. We next test our main hypotheses regarding the effects of this behavior on consumer experiences.

Studies 1a and 1b: Generating Content During a Positive and Negative Experience

The purpose of Studies 1a and 1b was to experimentally test the effect of generating content on immersion and enjoyment. These studies also examined two different experiences that varied in pleasantness: we randomly assigned participants to create content or not during a positive experience in Study 1a (i.e., a safari tour video in which lions take a nap) or during a

negative experience in Study 1b (i.e., a safari tour video in which lions eat a zebra alive).

Pretests

We conducted two pretests to ensure that the experiences used in Study 1a (N = 56; 48.2% female, mean age = 42.09 years) and Study 1b (N = 50; 42.0% female, mean age = 37.7 years) were indeed significantly positive and negative, respectively. Participants watched one of the two safari videos and then indicated how positive and how negative the experience was (each on slider scales ranging from 0 = "not at all" to 100 = "extremely"). The second item was reverse coded, and the two were averaged together to form one overall measure of valence in which higher numbers indicate greater positivity. For means and test statistics of each scale item separately (across all study pretests), see the "Pretest Summary Table" in the Web Appendix.

Participants rated the Study 1a experience as significantly above the midpoint of the scale (M = 68.34, SD = 20.52, t(55) = 6.69, p < .001), whereas participants rated the Study 1b experience as significantly below the midpoint of the scale (M = 35.42, SD = 29.38, t(49) = −3.51, p = .001). Thus, the pretests confirmed the intended valence of each video. We next tested how generating content during each experience would affect participants' immersion and enjoyment.

Study 1a: Positive Experience

Method. Two hundred nine MTurk participants (47.8% female, mean age = 40.18 years) took part in this study. Participants watched a first-person video (lasting approximately 3.5 minutes) of an African safari in which three lions interact with one another and nap. We asked participants to imagine that they were actually there, experiencing the safari.

We randomly assigned participants to one of two conditions: "content generation" or "no content." In the content generation condition, participants read, "People often create content during events. For example, many people post to social media, text a friend, or jot down notes while an experience unfolds. As such, you will create content during the safari." In this condition, there were also four spaces beneath the video for participants to write content. In the no content condition, participants simply experienced the safari without receiving any additional information. We instructed all participants to not pause or skip around in the video but to let it play and to visualize that they are actually there.

Following the video, participants indicated their immersion during the safari using two items: "To what extent did you feel immersed during the experience?" and "To what extent did you feel engaged during the experience?" (both on slider scales from 0 = "not at all" to 100 = "extremely"). We averaged these two items into an overall measure of immersion (r = .91, p < .001). Next, participants responded to a single item assessing their enjoyment: "How much did you enjoy the experience?" (slider scale from 0 = "not at all" to 100 = "extremely"). Finally, we asked participants two questions to assess their perception of time: "How quickly did time seem to pass while you were experiencing the safari?" (slider scale from 0 = "very slowly" to 100 = "very quickly") and "How long did this experience seem to last?" (slider scale from 0 = "very short" to 100 = "very long"). The second item was reverse coded and averaged with the first item to form an overall measure of time perception (r = .64; p < .001).

Results. Looking first at immersion, we found the predicted effect of content creation (t(207) = 2.74, p = .007). Participants who generated content felt more immersed (M = 79.50, SD = 21.37) than those who did not generate content (M = 70.80, SD = 24.32). Looking next at time perception, we also found a significant effect (t(207) = 3.63, p < .001) such that participants who generated content felt like time was passing more quickly (M = 55.54, SD = 23.94) than those who did not generate any content (M = 43.50, SD = 23.95). Finally, regarding enjoyment, we found that participants who generated content enjoyed their experience significantly more (M = 79.87, SD = 19.88) than those who did not generate content (M = 66.01, SD = 23.10; t(207) = 4.63, p < .001). Supporting our proposed mechanism, we also found that immersion significantly mediated the effect of generating content on enjoyment, both directly (95% CI: [1.23, 7.96]) and indirectly through time perception in a serial mediation (95% CI: [.37, 3.03]). See the "Mediation Figures" section of the Web Appendix for mediation figures across all studies.

Study 1b: Negative Experience

This study examined the effect of content generation during a negative experience. Importantly, our theory suggests that expressing *any* thoughts or reactions—whether positive or negative—should absorb consumers more in the unfolding experience. Thus, we predicted that even when participants generated content during a negative experience, this behavior would increase their immersion, as evidenced by the perception that time was passing more quickly.

We also used a different form of content creation in this study. Whereas in Study 1a the instructions were general and did not indicate the specific type of content participants should imagine creating (e.g., text messages, social media posts), participants in Study 1b were specifically instructed to write notes for themselves. Although much of the content consumers create is written to be shared with others, the immersive effects of expression have been demonstrated even when consumers express thoughts to themselves (Bezdek, Foy, and Gerrig 2013; Gerrig and Jacovina 2009). Thus, we predicted that generating content by explicitly writing notes to themselves would similarly increase participants' immersion in the experience.

Method. One hundred twenty-seven undergraduate participants (50.4% female, mean age = 22.2 years) took part in this study. Participants watched a first-person video (lasting approximately 3.5 minutes) of an African safari in which three lions eat a zebra alive. The scene is rather gruesome, making it a

relatively negative experience (as confirmed by the pretest). We again randomly assigned participants into one of two between-subjects conditions: "content generation" or "no content." In this study, participants in the content generation condition read, "People often take notes for themselves about events that they are taking part in, remarking on the things they see, hear, learn, or feel. As such, you will also write notes for yourself during the experience. These notes can say anything you want about your experience." Four spaces were provided beneath the video for this condition. Participants in the no content condition were again told to simply watch the safari experience. Immediately following the safari video, participants were asked the same questions from Study 1a assessing their time perception (r = .75; p < .001) and enjoyment.

Results. Looking first at time perception, we found a significant effect of content generation (t(125) = 2.69, p = .008). Participants who generated content during the experience felt like time was passing more quickly (M = 43.30, SD = 30.13) compared with participants who did not generate content (M = 30.50, SD = 23.07). This effect provides indirect evidence that participants felt more immersed, even during this negative experience. Looking next at enjoyment, we did not observe a significant effect of content generation ($M_{content}$ = 32.48, SD = 29.88; $M_{no\_content}$ = 30.14, SD = 30.93; t(125) = .43, p = .67). However, although the direct effect of generating content on enjoyment was not significant, we again found significant mediation operating through time perception (95% CI: [1.73, 12.28]).

Exploratory Text Analyses

We also conducted exploratory text analyses to examine the actual content participants created in Studies 1a and 1b. Specifically, we used the Linguistic Inquiry and Word Count software (LIWC; Pennebaker et al. 2015) to extract several dimensions from the content participants wrote. First, we examined overall word counts to obtain a rough measure of the effort participants put into content generation. Second, we examined the valence of the generated content using three different measures: (1) the overall tone of the generated content (a proprietary measure from LIWC ranging from 0 to 100, with higher numbers indicating a more positive tone), (2) the percentage of words referencing positive emotions (e.g., love, nice), and (3) the percentage of words referencing negative emotions (e.g., hate, sad).

Looking first at the content generated in Study 1a, participants wrote 24.18 words (SD = 14.42) on average during the positive safari experience (approximately 7.29 words per minute). Overall, the content generated in this study had a relatively neutral tone (M = 45.06, SD = 43.03; t(99) = −1.15, p = .25 compared to the scale midpoint) and included a similar percentage of positive and negative emotion words ($M_{positive}$ = 7.72, $SD_{positive}$ = 12.19; $M_{negative}$ = 5.85, $SD_{negative}$ = 6.26; t(99) = 1.44, p = .15). Looking next at the content generated in Study 1b, participants wrote 24.84 words (SD = 13.06) on

average during the negative safari experience (approximately 7.10 words per minute). Unlike Study 1a, the content generated in this study had a significantly negative tone (M = 16.16, SD = 28.94; t(63) = −9.35, p < .001 compared with the scale midpoint) and included a greater percentage of negative relative to positive emotion words ($M_{negative}$ = 6.68, $SD_{negative}$ = 7.86; $M_{positive}$ = 2.08, $SD_{positive}$ = 4.13; t(63) = 4.04, p < .001). Means and analyses of these text variables across studies are presented in Table 1.

We were also interested in the relationship between the affective tone of the generated content and our primary outcomes of interest (immersion, time perception, and enjoyment). We present these results in the General Discussion with a better-powered analysis that includes all the content created across our full set of studies (N = 574).

Discussion of Studies 1a and 1b

Together, Studies 1a and 1b demonstrate that generating content about an experience as it unfolds can increase consumers' feelings of immersion, assessed both directly and indirectly through time perception. Importantly, supporting our predictions, content generation provided immersive benefits for both a positive and a negative experience.

Interestingly, Study 1b also revealed a potential boundary condition for the effect of creating content on enjoyment. That is, becoming more immersed in a negative experience did not have a positive impact on enjoyment, as it did for the positive experience in Study 1a. It is possible that generating content had both negative effects (e.g., by immersing consumers into an unpleasant experience; Diehl, Zauberman, and Barasch 2016) and positive effects (e.g., by allowing consumers to put a positive "spin" on the negative events) and that these opposing effects cancelled each other out. Consistent with this, the text analysis revealed that although the overall tone of participants' content in Study 1b was negative, some participants mentioned positive aspects of the experience as well (e.g., "Awesome, they got food. This is natural competition."). We further examine the unique aspects of creating content during negative experiences in Study 4b.

In the next study, we build on these initial findings by testing the effect of content creation during a real consumer experience: the Super Bowl halftime show. This allowed us to examine the effect of natural content creation behaviors (e.g., real text messages) outside the lab.

Study 2: Generating Content During the Super Bowl Halftime Show

Further extending the experimental findings of Studies 1a and 1b, we next examined a real consumer experience that is also longer than those used in the prior studies. We recruited people who were planning to watch the 2019 Super Bowl halftime show and randomly assigned some participants to generate content during the show and others to not generate content during the show. Participants were able to generate content in

Table 1. Exploratory Text Analyses.

A: Exploratory Text Analyses Across Studies				
Study	**Word Count**	**Words Per Minute**	**Tone[a]**	**Positive Emotion Words**	**Negative Emotion Words[b]**
Study 1a	24.18 (14.42)	7.29	45.06 (43.03)	7.72 (12.19)	5.85 (6.26)
Study 1b	24.84 (13.06)	7.10	16.16 (28.94)***	2.08 (4.13)	6.68 (7.86)***
Study 4a	16.19 (13.11)	4.10	84.99 (29.39)***	27.22 (27.33)	1.03 (3.34)***
Study 4b	35.46 (31.54)	5.07	29.41 (38.18)***	7.54 (14.45)	8.06 (7.36)
Study 5	20.84 (16.40)	5.34	77.44 (34.00)***	12.77 (16.32)	.85 (2.84)***

B: Exploratory Text Analyses by Condition				
Study	**Condition**	**Word Count**	**Tone**	**Positive Emotion Words**	**Negative Emotion Words**
Study 4a	Incentive	17.03 (13.78)	84.74 (29.64)	25.75 (26.71)	1.16 (3.41)
	No incentive[c]	12.85 (9.38)*	85.97 (28.63)	33.08 (29.19)*	.49 (2.47)
Study 4b	Incentive	37.15 (31.79)	23.57 (34.77)	5.96 (11.99)	8.41 (7.86)
	No incentive[c]	29.60 (30.98)	49.67 (43.62)**	13.00 (20.47)*	6.85 (5.31)
Study 5	High norm	20.37 (14.79)	81.84 (30.18)	11.02 (10.21)	.23 (.93)
	Low norm[d]	21.78 (19.54)	68.63 (39.85)	16.27 (24.30)	2.07 (4.57)***

Numbers in parentheses represent standard deviations.
* $p < .10$, ** $p < .05$, *** $p < .01$.
[a]significance indicated compared with the scale midpoint (50).
[b]significance indicated compared with positive emotion words.
[c]significance indicated compared with incentive condition.
[d]significance indicated compared with high norm condition.

whatever manner they liked, allowing us to investigate natural content creation behavior (e.g., sending text messages, posting to social media) while experimentally testing how this behavior influenced their experience.

In addition to the content generation and no content conditions from the previous studies, a third condition was included in this study as an additional control, in which participants were instructed to create content that was not relevant to the halftime show. This condition controls for the use of technology and the act of writing, thus allowing us to isolate the effect of generating content *about* the experience. Drawing on prior work showing the detriments of using technology in ways that are separate from an ongoing experience (Offer and Schneider 2011; Wood et al. 2012), we did not expect this behavior to have the same benefits as content generation (in which technology is used in a way that is integral to the experience).

Method

For this study, we recruited 1,212 MTurk participants (46.8% female, mean age = 37.41 years) who indicated that they planned to watch the 2019 Super Bowl and halftime show. We collected a large initial sample because the study involved two parts and we anticipated attrition. Part 1 took place on the Saturday before the Super Bowl so that we could give participants instructions for an activity to perform during the event. Part 2 took place on Super Bowl Sunday, immediately after the halftime show.

In Part 1, all participants read that "people often create content during events, providing real-time insight into their perceptions, thoughts, and feelings. For example, many people post to social media, text a friend, or jot down notes while an experience unfolds." We then randomly assigned participants to one of three conditions in a between-subjects design: "content generation," "no content generation," or "unrelated technology use." In the content generation condition, we instructed participants to create content during the halftime show that was relevant and connected to the show. In the unrelated technology use condition, we also instructed participants to generate content during the halftime show but that this content should not be relevant or connected to the show. We instructed participants in the no content condition to create content during the first quarter of the game, but we explicitly instructed them not to create content during the halftime show. Note that the no content group was also given a content creation task, but it was for a time other than during the halftime show to prevent selection issues that can arise when some conditions are more demanding than others.

Participants then indicated whether they agreed to participate in their assigned activity. Out of 1,212 participants, 1,109 agreed to complete the task, which did not vary by condition (χ^2 (2) = 3.46, $p > .17$). To reinforce the manipulation, we asked participants who agreed to their assigned activity to explain the instructions in their own words.

Participants also responded to several questions about their Super Bowl plans during Part 1, including where (home, someone else's home, a bar/restaurant/pub, or other) and with whom (no one/alone, friends, family, colleagues, or other) they planned to watch the Super Bowl halftime show. These measures were intended as control variables, as we expected

participants to have different experiences depending on their location (e.g., where it may be more or less difficult to see or hear the show and/or to generate content) and whether they watched alone or with others. However, all participants planned to watch the show with other people, so that variable was not included as a control. We also measured pre-existing attitudes toward the halftime show headliner (i.e., "How familiar are you with Maroon 5" and "How much do you like Maroon 5;" 1 = "very unfamiliar/strongly dislike," and 7 = "very familiar/strongly like"; r = .46, $p < .001$) as a control variable, as feelings toward the band could influence participants' experiences. Finally, participants also indicated whether they were rooting for a particular team (Patriots, Rams, or neither). This was collected in case one of these teams had a commanding lead at the end of the first half, as this could also change the nature of the halftime show experience for fans that were winning versus losing. This did not end up being the case (Rams = 0, Patriots = 3 at halftime), so this variable was not included as a control in any of our analyses.

The participants who agreed to the content generation activity were emailed a reminder containing the instructions for their assigned activity approximately six hours prior to the start of the game. Part 2 became available immediately after the halftime show and was only available until the end of the game. To encourage participants to respond quickly after the show, the first 200 participants received a bonus (median time for completion was 8.0 minutes after the halftime show). Seven hundred thirty-one participants (51.8% female, mean age = 38.39 years) completed Part 2 of the study. Completion rate did not vary by condition (χ^2 (2) = 1.23, $p > .54$).

The dependent variables focused on participants' halftime show experience. Participants indicated their immersion (r = .90, $p < .001$), time perception (r = .69, $p < .001$), and enjoyment using the same items as in prior studies. Finally, participants responded to a series of manipulation checks. They estimated the number of pieces of content they created during each part of the game (Quarter 1, Quarter 2, and the halftime show) that were (1) posted to social media, (2) sent as text messages, (3) written or typed for themselves, or (4) other. Next, they indicated the percentage of the content they created during each part of the game that was related to what was happening at that point in time. Finally, participants indicated their demographics and how many alcoholic beverages they had consumed during the Super Bowl so far (M = .92; SD = 1.59).

Results

Manipulation checks. Looking first at the manipulation checks, participants in the content generation (M = 4.98, SD = 7.05; t(728) = 6.09, $p < .001$) and unrelated technology use (M = 3.96, SD = 5.41; t(728) = 4.22, $p < .001$) conditions created significantly more content during the halftime show than those in the no content condition (M = 1.55, SD = 6.04). The content generation and unrelated technology use conditions were also marginally different from each other (t(728) = 1.82, $p = .069$);

however, including this as a control variable does not influence the results. Importantly, those in the content generation condition reported that a higher percentage of the content they generated during the halftime show was directly related to the show (M = 82.40, SD = 31.75) compared to those in the no content (M = 29.26, SD = 40.56; t(728) = 17.05, $p < .001$) and unrelated technology use (M = 15.61, SD = 30.58; t(728) = 21.59, $p < .001$) conditions. Those in the unrelated technology use condition also created a significantly lower percentage of relevant content during the halftime show compared to those in the no content condition (t(728) = 4.31, $p < .001$). See the Study 2 Descriptives section of the Web Appendix for the types of content participants generated during each part of the game.

Effect of generating content. We next examined the effect of content generation on our primary outcomes. Prior to analyses, condition was recoded into two contrasts. The first compared the content generation condition and the no content and unrelated technology use conditions (C1: content generation = 2, no content = −1, unrelated technology use = −1). The second compared the no content and the unrelated technology use condition (C2: content generation = 0, no content = 1, unrelated technology use = −1). We selected this coding on the basis of our predictions: we expected that creating content would increase immersion and enjoyment compared with the no content and unrelated technology use conditions (captured by C1) but that the latter two conditions would not differ (captured by C2).

Looking first at immersion, we found our predicted effect (B = 2.22, t(728) = 2.98, $p = .003$). Those who generated content felt more immersed (M = 63.15, SD = 29.81) than those in the other two conditions (M = 56.48, SD = 31.40). Those in the no content (M = 57.55, SD = 31.82) and unrelated technology use (M = 55.47, SD = 30.96) conditions did not significantly differ (B = 1.73; t(728) = 1.04, $p > .43$). Next, we examined the effect on time perception. We observed a significant effect of generating content (B = 1.39; t(728) = 2.11, $p = .036$), such that those in the content generation condition felt that time was passing more quickly (M = 66.75, SD = 26.42) compared to the other two conditions (M = 62.59, SD = 26.66). The no content (M = 61.92, SD = 26.98) and unrelated technology use (M = 63.21, SD = 26.41) conditions did not differ (B = −.65; t(728) = −.56, $p = .58$). Finally, we examined the effect on enjoyment and again found the predicted effect of generating content (B = 1.68; t(728) = 2.20, $p = .028$). Those who created content enjoyed the halftime show more (M = 60.53, SD = 31.64) than those in the other two conditions (M = 55.50, SD = 31.95). The no content creation (M = 55.13, SD = 32.11) and unrelated technology use (M = 55.85, SD = 31.86) conditions did not differ (B = −.36; t(728) = −.27, $p = .79$).[3] In addition, replicating the previous studies,

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[3] The effect of generating content on immersion ($p = .013$), time perception ($p = .089$), and enjoyment ($p = .094$) still emerged when we omitted the control variables from the models.

immersion significantly mediated the effect of generating content on enjoyment, both directly (95% CI: [.60, 2.74]) and indirectly through time perception in a serial mediation (95% CI: [.05, .29]).

Discussion

Study 2 provides further evidence for the beneficial effects of generating content by examining a real-world consumer experience outside the lab in which participants generated natural forms of content (e.g., text messages, social media posts). Consistent with the previous studies, we again found that generating content led participants to feel more immersed, to perceive time as passing more quickly, and to ultimately enjoy the show more.

Not surprisingly, only generating content *about* the experience increased immersion and enjoyment: Technology use that was separate from the unfolding experience did not provide any of the same benefits. Interestingly, the many voices in the media recommending that consumers put down their phones during experiences (e.g., Livers 2016; Passage 2015) might only be considering the effects of unrelated technology use, thus neglecting the benefits of using those devices in ways that are related to unfolding experiences.

Notably, all our studies thus far have explicitly instructed participants to either generate content during an experience or refrain from doing so, allowing us to cleanly isolate its causal effects. However, consumers are of course typically free to make this choice themselves during their actual experiences. Accordingly, all our subsequent studies provide participants with the option to generate content (or not), and we investigate how this affects their experiences.

Study 3: Generating Content During a Holiday Experience

The primary goal of Study 3 was to investigate participants' self-selected content creation behavior. This allowed us to investigate whether choosing to generate content during an experience increases immersion and enjoyment in the same way as being instructed to do so. This design also enabled us to further examine the prevalence of consumer content creation (building on our pilot studies). In Study 3, we also tested the effects of content creation during a consequential real-world experience that spanned multiple hours and that participants chose to participate in on their own: their Thanksgiving celebrations.

Method

This study followed a two-part design, so we again collected a large initial sample in anticipation of some attrition. Eight days before Thanksgiving Day, 505 MTurk participants (57.4% female, mean age = 37.92 years) completed Part 1 of this study.

Participants who planned to celebrate Thanksgiving were recruited to answer a variety of questions about their plans for the holiday. These measures were intended for descriptive purposes. First, participants indicated what they planned to do (host people at their home, go to someone else's home, go to a restaurant, or other), whom they would spend Thanksgiving day with (friends, family, or both), and whether they were traveling for Thanksgiving (yes or no). We also measured other factors relevant to participants' anticipation of their Thanksgiving holiday. First, we asked participants how much work Thanksgiving Day would be for them (e.g., due to cooking, cleaning; measured on a slider scale from 0 = "no work at all" to 100 = "a great deal of work"). Next, we used three items to measure participants' anticipatory excitement for the holiday: how much are you looking forward to Thanksgiving day, how excited are you about your Thanksgiving day plans, and how positive do you expect your Thanksgiving day experience will be (each on a slider scale from 0 = "not at all" to 100 = "extremely;" $\alpha = .93$).

Part 2 became available the day after Thanksgiving, and 371 participants completed Part 2 (56.9% female, mean age = 38.28 years). We first asked participants to briefly describe what they did to celebrate Thanksgiving in an open-ended text response. Participants then responded to the same items assessing immersion (r = .82, $p < .001$) and enjoyment as in prior studies. We also asked participants a series of questions about the content they generated using the same measures as in Study 2: Participants estimated the number of pieces of content they created during their Thanksgiving experience of various types (i.e., social media posts, text messages, notes, other) and the percentage of their created content that was related to what was currently happening.[4] Finally, participants indicated the length of their Thanksgiving experience in an open-ended question (M = 7.39 hours, SD = 6.85).

Results

Likelihood of generating content. Overall, 83.8% (311/371) of participants chose to generate some form of content, which again demonstrates the prevalence of this behavior during consumer experiences. On average, those participants who generated content created approximately 9.98 pieces of content (SD = 21.27), and that content was predominately relevant to what was currently happening (M = 70.90%, SD = 30.77; t(310) = 11.98, $p < .001$ compared with the scale midpoint). Interested readers can find additional exploratory analyses in the "Study 3 Supplementary Analyses" section of the Web Appendix, including an examination of the relationship between various descriptive variables (e.g., gender, age, anticipatory excitement) and the likelihood that participants generated content.

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[4] We presented these measures and our primary dependent measures (immersion and enjoyment) in a counterbalanced order. There were no interactions with question order, and including order in our analyses did not alter the pattern of results.

Effect of generating content versus not. Replicating the experimental findings in prior studies, those who chose to generate content felt more immersed (M = 77.96, SD = 22.10) than those who did not generate content (M = 66.29, SD = 29.05; t(369) = 3.54, *p* < .001). Moreover, those who generated content enjoyed their experience significantly more (M = 79.80, SD = 26.72) than those who did not generate any content (M = 71.40, SD = 26.72; t(369) = 2.72, *p* = .007).[5] We also again found that immersion significantly mediated the effect of generating content on enjoyment (95% CI: [2.78, 13.44]).

Effect of content dimensions. In addition to examining the effect of creating *any* content (vs. not creating content) as in prior studies, we were also interested in whether generating *more* content might amplify (or diminish) these positive effects. However, among those who generated content, there was no effect of generating a greater amount of content (natural logged to account for skew) on immersion (B = 1.05, SE = 1.24; t(309) = .85, *p* > .3) or enjoyment (B = .54, SE = 1.17; t(309) = .46, *p* > .6). In other words, although generating *some* amount of content improved participants' experiences compared with generating none at all, we found no evidence that generating *more* content provided additional benefits.

We also examined the association between the relevance of the generated content and each of our primary dependent measures. In line with the findings of Study 2, in which content creation increased immersion and enjoyment relative to unrelated technology use, we found a significant positive relationship between percent relevance and both immersion (B = 21.71, SE = 3.89; t(309) = 5.58, *p* < .001) and enjoyment (B = 11.72, SE = 3.79; t(309) = 3.09, *p* = .002).

Discussion

These findings provide convergent evidence for our predictions within the context of a real-world experience in which participants freely chose whether or not to generate content. Interestingly, they also demonstrate that these positive effects on immersion can emerge during a longer experience (lasting multiple hours), which is in line with prior research suggesting that immersion and flow states can last throughout the entirety of long events (e.g., an entire marathon; Jackson 1995). However, it is also entirely possible that participants felt more immersed in some moments than in others (i.e., their levels of immersion ebbed and flowed rather than remained steady for several hours), though our predictions do not address this possibility. Most importantly for the current investigation, Study 3 further demonstrates that overall levels of immersion tend to be higher when consumers generate content, which in turn has positive downstream effects on enjoyment. Finally, Study 3 further speaks to the prevalence of content creation behavior in real-world settings.

In an additional study (reported in the Web Appendix due to space constraints), we found further evidence for the benefits of generating content during another real-world, relatively long, holiday experience: Halloween. Again, participants who generated content felt significantly more immersed (t(300) = 2.07, *p* = .039) and enjoyed their experience more (t(300) = 3.31, *p* = .001) than those who did not generate any content. Interested readers can refer to the Web Appendix for greater detail and additional analyses.

Though the designs of Study 3 and the Web Appendix study enable valuable insights about naturally occurring content generation behavior, they of course do not allow us to establish the direction or causality of the observed effects. Importantly, however, these studies indicate that the benefits of content creation apply to real-world experiences, and the findings hold regardless of whether this behavior is freely chosen or randomly assigned. Given the robust positive effects observed for generating content across multiple contexts and designs, our final set of studies sought to test simple strategies that marketers can use to encourage content generation, thus allowing firms and consumers to reap the benefits associated with this behavior.

Studies 4a and 4b: Incentives to Generate Content

Marketers sometimes offer financial rewards (e.g., promotions) to consumers for generating content. The purpose of Studies 4a and 4b was to test whether consumers who create content in response to such incentives still feel more immersed and enjoy the experience more than those who do not create content. If this is the case, then offering an incentive to generate content might be a beneficial marketing strategy for firms who wish to enhance consumers' experiences.

Study 4a: Dance Performances

Method. The methods and analyses for this study were preregistered on aspredicted.com

(https://aspredicted.org/k8dr5.pdf). Six hundred four MTurk participants (42.7% female, mean age = 36.85 years) took part in this study, which followed a 2 (incentive: yes vs. no) × 2 (timing: before vs. after part of the experience) between-subjects design.

All participants imagined that they had decided to attend a live taping of *World of Dance* performances and had front row seats to watch the show, which would include an opening and a main performance. All participants then read the same description of content creation used in prior studies and were given the option to create content during the main dance performance. In the "incentive" condition, participants were informed that if they chose to create content, they would be entered into a raffle for one of several $20 bonuses, whereas this information was not provided in the "no incentive" condition.

To further examine the implications of offering incentives to generate content, we also manipulated the timing of the content

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[5] Using adjusted degrees of freedom to account for differences in variances arising from uneven cell sizes did not alter the effect of generating content on immersion (*p* = .004) or enjoyment (*p* = .024).

generation decision. In particular, we assessed how being offered an incentive (vs. not) after an initial "taste" of the experience might affect rates of content creation and thus potentially the number of consumers who subsequently have better experiences. For instance, consumers might be more receptive to such incentives after first gaining some enjoyment, knowledge, or familiarity from the initial experience. To test this possibility, participants watched a short opening dance performance followed by a longer main performance. In the "before" condition, we gave participants the option to generate content (with or without an incentive) before watching either performance. In the "after" condition, we gave participants the option to generate content after watching the opening performance but before the main performance. All participants indicated whether they wanted to create content during the main dance performance (yes, no). We informed participants that text boxes would be provided beneath the video for the main performance, but only if they selected "yes" to generating content. Those participants in the incentive condition who chose to create content were indeed entered into a raffle with a 1 in 25 chance of winning $20, which was awarded as a bonus at the end of the study.

Participants then watched a two-minute opening performance followed by a four-minute main performance (with five text boxes in which to generate content if they opted in). Both videos were filmed from a first-person perspective so that participants felt like they were actually sitting in the front row, and both featured entertaining, fast-paced dance performances by finalists in the 2017 *World of Dance* competition. After watching both videos, participants indicated their immersion (r = .90, $p < .001$), enjoyment, and time perception (r = .34, $p < .001$) during the main performance using the same items as in prior studies.

Pretest. We pretested the videos used in Study 4a to confirm that they were both considered positive experiences. Thirty participants (30.0% female, mean age = 39.6) watched each performance and indicated the valence of the experience using the same scale from the Study 1 pretests. Participants rated both performances significantly above the midpoint of the scale ($M_{opening}$ = 81.08, $SD_{opening}$ = 19.70; M_{main} = 71.07, SD_{main} = 23.66, both ts(29) > 4.87, both $ps < .001$), confirming that both experiences were indeed positive, as intended.

Results

Likelihood of generating content. A binary logistic regression revealed only a main effect of incentive (B = .53, SE = .09; χ^2 = 32.60, $p < .001$), with no effect of timing (B = −.10, SE = .09; $\chi^2 = 1.05, p = .31$) and no interaction (B = .003, SE = .09; $\chi^2 < 1$). As expected, participants were more likely to opt into generating content when they were incentivized (226/410, 55.1%) than when they were not incentivized (58/194, 29.9%). Ten participants who opted to create content did not actually write any content. Looking instead at actual content creation, we still observed only a main effect of incentive (B = .53, SE = .09; χ^2 = 32.23, $p < .001$), such that a greater

percentage of participants generated at least one piece of content in the incentive condition (219/410, 53.4%) than in the no incentive condition (55/194, 28.4%). Though we expected that having an initial experience might spur content creation in a later experience (perhaps as the result of enjoyment or familiarity), we found no effect of decision timing on the likelihood of generating content. That is, incentives increased content creation, and this did not depend on when participants were asked to make this decision (whether before or after the opening performance). This suggests that the timing of when consumers are solicited to create content may not be a relevant factor for marketers encouraging this behavior.

Effect of opting in versus opting out (vs. no incentive). To provide insights into the effect of generating content when incentivized, we next conducted a series of 3 (no incentive vs. opted to generate content when incentivized vs. opted to not generate content when incentivized) × 2 (timing: before vs. after part of the experience) ANOVAs on each of our dependent measures. That is, we separated participants in the incentive condition into two subgroups: those who opted into content creation and those who opted out. Importantly, comparing incentivized participants who chose to create content to the full set of nonincentivized participants (e.g., Ruedy et al. 2013) allowed us to test whether incentivized consumers were better off than consumers who did not experience this firm intervention, and it provided us with a conservative test of our hypotheses (since the nonincentivized group also included people who chose to create content). Furthermore, comparing incentivized participants who opted out of content creation to the full nonincentivized group allowed us to test whether firm incentives might have detrimental effects on those who chose not to create content. For example, it is possible that being offered an incentive might induce reactance, or that forgoing an incentive might make consumers feel frustrated or upset, either of which might undermine their immersion and enjoyment. Note that this analysis is why we overpopulated the incentive condition (with a 2:1 probability relative to the no incentive condition), as doing so provided sufficient power and relatively even cell sizes for these analyses (see preregistration).

Looking first at immersion, we observed only a main effect of incentive (F(2, 598) = 6.61, $p = .001$), with no effect of timing (F(1, 598) < 1) and no interaction (F(2, 598) = 1.87, $p = .15$). Those who opted into generating content felt significantly more immersed in the experience (M = 71.54, SD = 26.32) than those in the no incentive condition (M = 64.59, SD = 27.97, t(598) = 2.52, $p = .012$) as well as those who opted out of content generation (M = 61.74, SD = 29.97, t(598) = 3.50, $p = .001$). The latter two groups did not significantly differ from each other (t(598) = .96, $p > .3$).

Next, examining time perception, there was a main effect of incentive (F(2, 598) = 8.39, $p < .001$), with no effect of timing (F(1, 598) < 1) and no interaction (F(2, 598) < 1). Those who opted into generating content (M = 48.54, SD = 21.25) perceived that time was passing more quickly compared with

those in the no incentive condition (M = 41.03, SD = 22.94, t(598) = 3.28, p = .001) and compared with those who opted out of generating content (M = 39.99, SD = 25.62, t(598) = 3.71, p < .001). The latter two groups did not significantly differ (t(598) = .43, p > .6).

Finally, looking at enjoyment, there was a main effect of incentive (F(2, 598) = 7.62, p = .001), with no effect of timing (F(1, 598) < 1) nor interaction (F(2, 598) < 1). Those who opted into generating content (M = 68.95, SD = 28.31) enjoyed the main performance more than those in the no incentive condition (M = 61.89, SD = 31.44, t(598) = 2.35, p = .019) and those who opted out of generating content (M = 57.24, SD = 31.86, t(598) = 3.85, p < .001). The latter two groups did not significantly differ (t(598) = 1.47, p = .14). There was an indirect effect of opting into generating content on enjoyment operating through immersion, both directly (95% CI compared with no incentive condition: [1.27, 9.14]; 95% CI compared with opting out: [3.16, 11.43]) and indirectly through time perception in a serial mediation (95% CI compared with no incentive condition: [.30, 2.47]; 95% CI compared with opting out: [.74, 3.16]).

Effect of generating content versus not. In addition to the analyses we preregistered, we also ran a series of ANCOVAs predicting our primary dependent outcomes as a function of whether or not participants generated content, while controlling for incentive condition, timing condition, and their interaction. For each outcome, we observed a main effect of generating content: Those who generated content felt more immersed ($M_{content}$ = 72.82, $SD_{content}$ = 24.96; $M_{no\_content}$ = 60.72, $SD_{no\_content}$ = 29.75; F(1, 599) = 27.68, p < .001), perceived time to be passing more quickly ($M_{content}$ = 48.92, $SD_{content}$ = 19.92; $M_{no\_content}$ = 38.87, $SD_{no\_content}$ = 25.28; F(1, 599) = 25.83, p < .001), and enjoyed the performance more ($M_{content}$ = 70.92, $SD_{content}$ = 27.19; $M_{no\_content}$ = 56.39, $SD_{no\_content}$ = 32.11; F(1, 599) = 35.29, p < .001).

Study 4b: Horror Film

Building on Study 4a, this study tested the efficacy of incentivizing content creation for a suspenseful horror film. We were interested in whether incentives would increase content creation and subsequent immersion even during a negative experience.

Method. One hundred ninety-nine MTurk participants (41.2% female, mean age = 36.64 years) took part in this 2-cell (incentive: yes vs. no) between-subjects design. We manipulated incentives using the same instructions as in Study 4a. Participants then watched a short (approximately seven-minute) horror film called "The Bells" (synopsis on YouTube: "Following a death in the family, its members start hearing a mysterious sound"). On the basis of their content creation choice, participants watched this film either with or without seven text boxes present. After the horror film ended, participants indicated their immersion (r = .88, p < .001), enjoyment, and time perception (r = .49, p < .001) using the same items as in prior studies.

Pretest. We pretested the horror film used in Study 4b to confirm that it was a negative experience, as intended. Forty participants (35.0% female, mean age = 39.53) watched the film and indicated the valence of the experience using the same scale from the prior pretests. The film was rated significantly below the midpoint of the scale (M = 37.24, SD = 27.92, t(39) = −2.89, p = .006), confirming that the experience was indeed negative.

Results

Likelihood of generating content. As expected, a binary logistic regression revealed that participants were more likely to opt into generating content when they were incentivized (54/98, 55.1%) than when they were not (16/101, 15.8%, B = 1.88, SE = .34; χ^2 = 30.43, p < .001). Three participants who opted into content creation did not actually write any content. Still, a greater percentage of participants created at least one piece of content in the incentive condition (52/98, 53.1%) compared to the no incentive condition (15/101, 14.9%, B = 1.87, SE = .35; χ^2 = 29.29, p < .001).

Effect of opting in versus opting out (vs. no incentive). As in Study 4a, we divided participants in the incentive condition into two groups: those who opted into content creation and those who opted out of content creation. We then compared each of these groups with the no incentive condition. Looking first at immersion, we found that those who opted into generating content felt significantly more immersed in the experience (M = 85.18, SD = 17.50) than those in the no incentive condition (M = 77.98, SD = 21.72, t(196) = 2.00, p = .047) and those who opted out of generating content (M = 74.80, SD = 23.26, t(196) = 2.43, p = .016). The latter two groups did not differ (t(196) = .85, p > .3). Furthermore, those who opted into generating content perceived time as passing marginally more quickly (M = 57.99, SD = 23.75) compared with those in the no incentive condition (M = 50.34, SD = 25.62, t(196) = 1.79, p = .075) and directionally more quickly than those who opted out of generating content (M = 50.72, SD = 25.24, t(196) = 1.43, p = .15). The latter two groups did not differ (t(196) = .08, p > .9).

Finally, examining enjoyment, there were no significant differences between those who opted into generating content (M = 68.73, SD = 39.08), those in the no incentive condition (M = 65.85, SD = 31.04), and those who opted out of generating content (M = 63.65, SD = 28.11, all |ts(196)| < 1, all ps > .4). This finding is in line with Study 1b, in which we found no direct effect of creating content on enjoyment during a negative experience. However, as in Study 1b, we once more observed an indirect effect of opting into generating content on enjoyment operating through immersion both directly (95% CI compared with no incentive condition: [.41, 8.59]; 95% CI compared with opting out: [1.05, 12.00]) and indirectly through time perception in a serial mediation (95% CI compared with no incentive condition: [.17, 3.98]; 95% CI compared with opting out: [.49, 5.68]).

Effect of generating content versus not. We also ran a series of ANCOVAs predicting our dependent variables as a function of whether participants generated content while controlling for incentive condition. We once more found that those who created content felt more immersed ($M_{content} = 84.35$, $SD_{content} = 17.13$, $M_{no\_content} = 76.48$, $SD_{no\_content} = 22.77$, $F(1, 196) = 5.64$, $p = .018$), perceived time as passing marginally more quickly ($M_{content} = 57.57$, $SD_{content} = 23.05$, $M_{no\_content} = 49.82$, $SD_{no\_content} = 25.85$, $F(1, 196) = 3.00$, $p = .085$), and enjoyed the film marginally more ($M_{content} = 71.52$, $SD_{content} = 27.88$, $M_{no\_content} = 63.34$, $SD_{no\_content} = 30.44$, $F(1, 196) = 3.84$, $p = .052$).[6]

Discussion

Studies 4a and 4b establish that offering incentives can indeed be an effective strategy for increasing consumer content creation and enhancing experiences. Participants were more likely to opt into creating content when offered an incentive, and those who chose to generate content felt more immersed—during both a positive (Study 4a) and a negative experience (Study 4b). Furthermore, those who opted into creating content perceived time as passing more quickly and enjoyed the positive experience more than those who chose not to generate content.

Importantly, we found that consumers benefitted from opting into content creation when incentivized (with no detriment from opting out) compared with consumers who were not offered an incentive to generate content. That is, our analyses support the idea that consumers who generate content because of an incentive reap the same rewards from this behavior as those who generate content organically. Therefore, our results suggest that offering consumers incentives for content generation can provide positive net benefits for firms.

Similar to Studies 1a and 1b, these studies also provide further evidence that generating content may not increase enjoyment of negative experiences like it does for positive experiences. To more directly compare these results, we conducted a single-paper meta-analysis (McShane and Brockenholt 2017), which confirmed that the effect of generating content on enjoyment is significantly greater for positive versus negative experiences (interaction contrast estimate = 8.35, SE = 3.76, $z = 2.22$, $p = .034$; see the "Single-Paper Meta-Analysis" section of the Web Appendix). Moreover, no such difference emerged for immersion (interaction contrast estimate = 2.69, SE = 3.31, $z = .81$, $p = .29$) or time perception (interaction contrast estimate = 1.22, SE = 3.30, $z = .37$, $p = .37$), supporting our proposition that generating content can immerse consumers into both positive and negative experiences in a similar manner.

Studies 1b and 4b both examined negative experiences, but there are some noteworthy distinctions between the experiences examined in these studies. Namely, the horror film was perceived to be negative yet enjoyable overall (mean enjoyment significantly exceeded the scale midpoint), whereas the safari experience in Study 1b was perceived to be both negative and unenjoyable (mean enjoyment was significantly below the scale midpoint). This result is consistent with findings that the negative affect induced by scary movies is part of what makes them enjoyable to consumers (Andrade and Cohen 2007). This prior research also indicates that consumers who enjoy scary movies experience both heightened positive and negative affect. In line with this notion, a text analysis of the content generated during these two experiences revealed that participants expressed similarly high levels of negative affect but significantly greater positive affect during the horror film compared with the safari experience (see Table 1 for means of text variables across studies).

Having established that generating content when incentivized can indeed improve immersion and enjoyment (for positive experiences), we next test whether a lower cost intervention similarly enhances consumer experiences.

Study 5: Norm Nudge to Generate Content

In this study, we tested the efficacy of a more cost-effective (i.e., nonfinancial) firm intervention for increasing content creation: a social norm nudge. The purpose of this study was to test whether consumers who create content as the result of a norm nudge feel more immersed and enjoy their experience more than those who do not create content. As such, we informed participants of a high versus low descriptive norm regarding content creation (i.e., that a lot of people vs. very few people generate content), and we examined whether those who generated content in response to this normative information benefited from this behavior.

Notably, we also employed an externally valid means of soliciting content creation. In particular, companies often utilize personalized apps (e.g., Whova, FestApp) to encourage consumers to generate content. We modeled our study on this context by informing participants that a bus tour company had made one of these platforms available for optional use. Accordingly, this study allowed us to assess whether using social norms can increase the adoption and use of these apps and thus potentially improve consumers' experiences.

Method

Two hundred four participants (44.6% female, mean age = 35.58 years) took part in this 2-cell (norm: low vs. high) between-subjects study on MTurk. Participants first read that they would experience a bus tour of Vancouver, Canada. In this study, they also read that the tour company "offers its customers an app to create content during the tour. The app is just for fun, and you can use it to write anything that you want during the tour."

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[6] This effect on enjoyment was unexpected and appears to be driven by a small number of participants in the no incentive condition who chose to create content and reported very high enjoyment.

To manipulate descriptive norms, participants were either told that 10% of the tour company's customers download and use the app ("low norm" condition) or that 90% of customers use the app ("high norm" condition; Demarque et al. 2015). They then indicated whether they would like to use the app to create content (yes, no). Participants were informed that spaces would be provided beneath the video, but only if they selected "yes" to generating content.

Participants then watched the approximately four-minute bus tour video. Those who chose to generate content during the video were provided with five spaces to write content.

After the experience, participants indicated their immersion ($r = .89$, $p < .001$), enjoyment, and time perception ($r = .49$, $p < .001$) using the same items as in prior studies.

Finally, for exploratory purposes, we also measured memory in this study. Specifically, participants answered four multiple choice questions to assess their visual memory (i.e., identify which of three objects they had seen during the bus tour) and four multiple choice questions to assess their auditory memory (i.e., recall facts provided by the tour guide during the tour; adapted from Barasch et al. 2017). Because prior research has found mixed evidence for the effect of immersion on memory (Brockmyer et al. 2009; Mania and Chalmers 2001), we had no clear predictions for these measures and thus report the results in the Study 5 Supplementary Analyses section of the Web Appendix.

Pretest

We pretested the video used in Study 5 to confirm that it was positive, as intended. Thirty participants (30.0% female, mean age = 38.4 years) watched the video and indicated the valence of the experience using the same scale from the prior pretests. The video was rated significantly above the midpoint of the scale ($M = 76.43$, $SD = 21.86$, $t(29) = 6.62$, $p < .001$), confirming that it was indeed positive.

Results

Likelihood of generating content. As expected, a binary logistic regression revealed that participants in the high norm condition were significantly more likely to opt into content creation (51/103, 49.5%) than those in the low norm condition (27/101, 26.7%, $B = .99$, $SE = .30$; $\chi^2 = 10.94$, $p = .001$). Nine participants who opted to create content did not actually generate any content. Looking instead at actual content creation, those in the high norm condition were still significantly more likely to create content (46/103, 44.7%) than those in the low norm condition (23/101, 22.8%, $B = 1.01$, $SE = .31$; $\chi^2 = 10.61$, $p = .001$).

Effect of generating content versus not. Next, we ran a series of ANCOVAs predicting our primary dependent variables as a function of whether participants generated content (vs. not) while controlling for norm condition. Replicating our effects from prior studies, those who generated content felt significantly more immersed ($M_{content} = 84.30$, $SD_{content} = 12.63$; $M_{no\_content} = 74.11$, $SD_{no\_content} = 25.20$; $F(1, 201) = 6.77$, $p = .01$), perceived time as passing more quickly ($M_{content} = 64.05$, $SD_{content} = 20.46$; $M_{no\_content} = 52.77$, $SD_{no\_content} = 24.70$; $F(1, 201) = 7.76$, $p = .006$), and enjoyed the experience more ($M_{content} = 84.46$, $SD_{content} = 12.79$; $M_{no\_content} = 70.47$, $SD_{no\_content} = 26.10$; $F(1, 201) = 12.91$, $p < .001$) compared to those who did not generate any content. As in prior studies, immersion also significantly mediated the effect of generating content on enjoyment both directly (95% CI: [2.63, 10.79]) and indirectly through time perception in a serial mediation (95% CI: [.10, 1.59]).

Discussion

Study 5 tested the effectiveness of a social norm nudge—a low-cost strategy for increasing content creation and thus reaping the associated benefits. We found that highlighting a high (vs. low) descriptive social norm for creating content increased rates of this behavior. Furthermore, we again found that consumers who chose to generate content subsequently felt more immersed, as though time was passing more quickly, and ultimately enjoyed their experience more. Moreover, our use of a solicitation paradigm adapted from existing content creation platforms helps increase the external validity of these findings. Accordingly, this study provides actionable insights for firms seeking to encourage adoption of these sorts of platforms to enable their consumers to enjoy the benefits of content generation.

General Discussion

Experiences are central to consumers' lives, and understanding the factors that affect these experiences is an important and underexplored area of marketing. Because experiences contribute greatly to consumers' happiness and well-being (Van Boven and Gilovich 2003), recent research has begun to examine how various behaviors, particularly those that involve technology, influence experiential enjoyment (e.g., Diehl, Zauberman, and Barasch 2016; Dwyer, Kushlev, and Dunn 2017). Our work builds on this growing literature and is the first to examine the common practice of generating content during an unfolding experience. Across nine studies (and one reported in the Web Appendix), we find that generating content leads consumers to feel more immersed, which leads to the sensation that time is passing more quickly. Moreover, this increased immersion and accelerated time perception has a positive downstream consequence on consumers' enjoyment of the experience.

We tested these effects across a variety of experiences, both inside and outside the lab, including positive and negative safari tours (Studies 1a and 1b), the Super Bowl halftime show (Study 2), holiday celebrations (Study 3 and the Web Appendix Study), a fast-paced dance performance (Study 4a), a horror film (Study 4b), and a bus tour (Study 5). Across all these experiences, which vary in their pleasantness and duration

(from a few minutes to multiple hours), we find convergent evidence for the immersive benefits of generating content. Our studies also speak to the prevalence of content generation during a variety of experiences including a music festival (Pilot Study A), a television series finale (Pilot Study B), and holiday celebrations (Study 3 and the Web Appendix Study).

We also examined several firm interventions for increasing content creation, and we demonstrate that consumers who choose to create content as the result of these strategies still reap the associated benefits. In particular, we find that incentivizing content generation and highlighting descriptive social norms can reliably increase content creation, with subsequent increases in consumers' immersion and enjoyment.

Implications and Theoretical Contributions

Technology. We extend recent literature on how technology, particularly smartphones, influences consumers' daily lives. Much of this research has shown detriments caused by mobile technology use, particularly when it is used to multitask (Thornton et al. 2014), to take part in virtual interactions during face-to-face interaction (Sbarra, Briskin, and Slachter 2019), or to track one's activities (Etkin 2016). In contrast, our research highlights an important benefit of technology use that may sometimes be overlooked. That is, instead of conflicting with the current experience, content generation allows consumers to use technology in a complementary way, resulting in greater immersion and enhanced enjoyment. Indeed, even during social events (e.g., Dwyer et al. 2017), technology use need not be detrimental to the ongoing experiences (as in the holiday experiences examined in Study 3 and the Web Appendix Study). Thus, the present research helps paint a more nuanced and complete picture of how new technologies affect consumer well-being.

Experiential marketing. The present research also contributes to a growing body of work examining how experiences, and consumer actions within those experiences, influence happiness (Barasch, Zauberman, and Diehl 2018; Dunn, Gilbert, and Wilson 2011; Tonietto and Malkoc 2016). By exploring the effects of a novel consumer behavior, we provide valuable insights for people looking to get more out of their experiences. Our results also have implications for firms that participate in experiential marketing, who invest substantial resources to create experiences that maximize consumer enjoyment (Pine and Gilmore 1999; Schmitt 1999). In particular, our studies highlight two simple firm strategies for encouraging consumer content creation, allowing marketers to reap the benefits of this behavior. By increasing enjoyment for positive experiences, encouraging content creation could also lead to a variety of positive long-term effects, including brand loyalty (Chitturi, Raghunathan, and Mahajantes 2008), repeat consumption (Wirtz et al. 2003) and the spread of positive word of mouth (Barasch, Zauberman, and Diehl 2018; Ha and Im 2012).

Time perception. The present work also contributes to a broad literature on subjective time perception. Past research has examined how time is perceived during different types of experiences (Sackett et al. 2010), as well as how emotions (Angrilli et al. 1997; Vohs and Schmeichel 2003), motivations (Conti 2001; Gable and Poole 2012), and individual differences (O'Brien, Anastasio, and Bushman 2011) affect how quickly or slowly time seems to pass. However, limited research has studied how specific *actions* during an experience might influence consumers' perception of time. Contributing to research demonstrating a close link between time perception, immersion, and enjoyment (Csikszentmihalyi 1990; Gable and Poole 2012; Jennett et al. 2008; Sackett et al. 2010; Wood, Griffiths, and Parke 2007), we consistently find that by increasing immersion, generating content leads to the perception that time is flying, which ultimately boosts enjoyment.

Future Directions

Antecedents of content creation. The current investigation focused predominantly on the consequences of generating content. However, many open questions remain about when and why consumers might choose to participate in this behavior. While we demonstrated the effect of two firm strategies on consumer content creation, future research might examine other experience and consumer-level factors that lead consumers to create content. For example, beyond serving as a common outcome of generating content, perhaps enjoyment also serves as an antecedent to this behavior. Such a possibility would indicate that enjoyment and content creation are mutually reinforcing. Other factors that may encourage consumers to create content during experiences might include their level of arousal (Berger 2011), how much they need to feel socially connected (Chen 2017), and how unique or special the experience is (Berger 2014).

Affective tone of generated content. Beyond the effect of generating content versus not, we also explored how the valence of the generated content might affect immersion and enjoyment. To examine possible relationships with greater power, we combined the data from participants in all studies who generated content (N = 574; see the "Affective Tone Text Analysis Across Studies" section of the Web Appendix). We found that as the content became more positive in tone, participants who generated content felt more immersed ($t(505) = 3.56$, $p < .001$), felt as though time was passing more quickly ($t(568) = 4.04$), $p < .001$), and enjoyed experiences more ($t(568) = 5.94$, $p < .001$). There were also significant positive effects of using a greater percentage of positive emotion words on immersion and enjoyment (both $ts > 6.2$, both $ps < .001$), though not on time perception ($t(547) = 1.45$, $p = .15$). Finally, there were significant negative effects of using more negative emotion words on all our primary dependent measures (all $ts < -2.3$, all $ps < .03$). Thus, this text analysis indicates that generating content may be most beneficial to consumers when the content they create is more positive.

Other features of the experience. Throughout our studies, we tested the robustness of our effects by examining a variety of experiences that differed on multiple dimensions (e.g., length, level of activity, pleasantness). However, many of these factors on their own would be fruitful avenues for future exploration. For example, although we found that generating content increased immersion and enjoyment for both fairly short (three- to four-minute) experiences and those lasting several hours, it is possible that these effects would diminish (or even reverse) at a certain point (e.g., by highlighting boring periods of downtime between more entertaining aspects of an experience). Conversely, generating content could also help ward off boredom by increasing immersion into unexpectedly interesting details. Relatedly, although the holiday experiences investigated in Study 3 and the Web Appendix study involved more active participation beyond viewing (e.g., cooking Thanksgiving dinner), it is possible that experiences that demand very high levels of physical activity (e.g., playing a sport, dancing) might be disrupted by content generation and thus constitute an important boundary condition. Indeed, content creation can be conceptualized as one form of "participatory behavior," a topic that is gaining increased attention from marketing scholars (e.g., vocalizing, Bezdek, Foy, and Gerrig 2013; photo-taking, Diehl, Zauberman, and Barasch 2016; liking or sharing brand messages on social media, Villarroel et al. 2019). Future research should explore when various forms of consumer participation lead to similar versus divergent effects on experiences.

Though open questions remain, this research provides a preliminary understanding of how the increasingly prevalent behavior of content generation affects consumers' experiences. We hope this initial foundation will inspire researchers to further explore how new technologies are reshaping consumers' lives.

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