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## Feeling of Missing Out (FOMO) and Its Marketing Implications

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## Report Summary

Ceren Hayran, Lalin Anik, and Zeynep Gürhan-Canli investigate the popular concept of “FOMO”—the feeling of missing out on desirable experiences in one’s environment that one is aware of but doesn’t partake in. Despite extensive managerial press and growing media interest in FOMO, there has been limited research on its conceptualization and consequences.

In seven online, laboratory, and field studies, they explore when and how FOMO occurs, how it is different from other affective states, and its consequences for consumer behavior. Their results demonstrate that FOMO is driven by the awareness of favorable and self-relevant experiences taking place in one’s environment. Contrary to extant work, their findings reveal that the popularity of unpursued activities among majorities (e.g., Facebook “likes” or Twitter trending topics) does not induce FOMO unless the unattended activities are personally relevant and favorable.

Their results also show that experiencing FOMO decreases intentions to repeat a current experience (i.e., redo/revisit intentions) and may decrease the valuation of and recommendation intentions for the current experience, and thus, may represent a threat to consumer loyalty. Importantly, they show that FOMO may even be experienced during highly enjoyable experiences (e.g., a fun social event), in the absence of negative feelings.

Hayran, Anik, and Gürhan-Canli suggest several strategies for leveraging FOMO either by fostering it or by helping consumers fight it.

To foster FOMO, it is important to catch consumers on the go (e.g., send restaurant deals when consumers are dining at a competitor), and to react in real time to FOMO-inducing experiences (e.g., music festivals) with targeted and personalized messages. Marketers can also use content marketing to make consumers feel like they are at a disadvantage without being involved with a product, brand, or an experience.

To fight FOMO, it is important to build active and engaging relationships with customers to prevent their switching intentions as a result of experiencing FOMO (e.g., provide on-the-spot reward program offers to encourage repeat purchase behavior), to proactively inform consumers about events or marketing deals (e.g., through mobile applications), and to use marketing communication tools that will decrease consumers’ FOMO by motivating them to focus on their current experiences.

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Imagine that on a Friday evening, you are having dinner at a newly opened restaurant that you have been eager to try. As you are dining, your phone starts flashing with messages and social media notifications. Upon checking posts and conversations, you become aware of other activities and experiences taking place in town: a newly released movie, a concert in downtown, free pizza night at your favorite restaurant, and a group of your friends at a gathering. You spend some time scrolling through the latest updates to realize that there are numerous alternative activities that you did not know about. How would you feel? Would your awareness of alternative activities affect your dining experience that evening or your restaurant choice next time you dine?

Today, plagued by continual rushing and a sense of urgency, we pursue more, live faster, and feel that our resources are insufficient (Gleick 2000). Through digital tools, we have increased access to real-time information about the experiences going on in our environment. Yet, since at any moment we can only be at one place, we are absent from several other experiences. Consequently, we are likely to experience an aversive feeling of missing out (FOMO) on the known but unattended experiences (JWT 2012; Przybylski et al. 2013). Our aim in this research is to explore this FOMO: when and how it occurs, how it is different from other affective states, and its consequences for consumer behavior.

Entered into the Oxford English Dictionary in 2013 with other popular social media terminology like “selfie” and “emoji,” FOMO stands for “fear of missing out.” Due to its conceptual distinction from fear, however, we think that it is more appropriate to label FOMO as the “feeling of missing out.” Based on a series of online, laboratory, and field studies, we define FOMO as “the negative affective state that individuals encounter as a result of becoming aware of the fleeting favorable and self-relevant experiences that are taking place in the environment, from which they are absent.”

There is growing media attention on FOMO (e.g., Cohen 2013, Hedges 2014; Herman 2012; JWT 2012; Schreckinger 2014; Wortham 2011). A quick hashtag tracking reveals that only within a month, the #FOMO hashtag was mentioned 12,984 times on Twitter (3/24/2016–4/24/2016; [www.hashtracking.com](http://www.hashtracking.com)). It is so rampant in today’s society that several digital applications have been developed to help consumers overcome FOMO (e.g., FOMOsosonar, NOMO—“no more missing out,” Fomo). Indeed, our exploratory study on FOMO confirmed its ubiquity. Nine hundred and thirty-six individuals from Amazon’s Mechanical Turk (MTurk)

online panel (Mage = 33.20, SD = 13.58, 45% women) read a detailed description of FOMO and indicated whether they experience FOMO in general (1 = yes, 2 = no), and to what extent (1 = never, 7 = always). Fifty-eight percent of the participants indicated experiencing FOMO in general, and 81% indicated experiencing it at least occasionally or more frequently, supporting the pervasiveness of FOMO. While FOMO has become prevalent and increasingly popular with extensive media coverage, scarce empirical work exists on its conceptualization and consequences (Przybylski et al. 2013).

In this research, responding to the calls for further exploration of the construct (JWT 2012; Przybylski et al. 2013), we elaborate on the meaning of FOMO in a nomological web of constructs, explore its antecedents, and demonstrate its consequences for consumer behavior in diverse contexts. The rest of the paper is organized as follows. We first introduce the concept of feeling of missing out. Then, we discuss the antecedents and consequences of FOMO. We present seven online, laboratory, and field studies that establish the ubiquity of FOMO and explore the hypothesized effects. We also provide a theoretical discussion on the distinction of FOMO from the constructs of regret, anticipated regret, envy, social exclusion, and fear.

### **Feeling of Missing Out (FOMO)**

From an evolutionary perspective, having knowledge about one's environment and quickly exchanging information within social groups were critical for survival (Barkow, Cosmides, and Tooby 1995). With the digital era, computer-mediated tools have amplified instant communication (Crosier, Webster, and Dillan 2012). In the 21st century, accessing and exchanging information is not only easier than ever, but receiving information about what's happening in one's surroundings is almost unavoidable, especially due to increasing social media usage.

Research revealed that social media exposure has mixed effects on the individual. On the upside, access to more information and knowledge about other people's lives increase social opportunities as well as self-esteem (Gonzales and Hancock 2011) and social capital (Ellison, Steinfeld, and Lampe, 2007). On the downside, social media usage leads to decreased face-to-face interactions and increased loneliness and depression (Kraut et al. 1998). Since people tend to selectively convey the more positive and favorable aspects of themselves and their lives

(Gonzales and Hancock 2011), viewing others' profiles may lead to higher dissatisfaction due to the perception that they are happier and doing better than the viewer is (Chou and Edge 2012).

Most relevant to this paper, social media usage exposes individuals to more options and a wider range of online and offline social activities than one can pursue. As Facebook, Twitter, Instagram, Snapchat, and other platforms promote events, activities, and conversations, those who view but cannot attend those experiences due to logistical or resource restrictions (e.g., limited time) may feel excluded (Burmeister 2013). Social media involvement also triggers FOMO (JWT 2012; Przybylski et al. 2013), which has been shown to link psychological need deficits (i.e., competence, autonomy, and relatedness; Deci and Ryan 1985) with social media usage. More specifically, Przybylski et al. (2013) showed that deficits in psychological needs increased general sensitivity to FOMO, which consequently increased social media usage. Examining FOMO as a personality trait, they also found that the Millennials—the most active users of social media (Burmeister 2013)—and individuals with lower life satisfaction and mood were more susceptible to FOMO.

Furthermore, Przybylski et al. (2013) associated FOMO with social influence effects; a comparative judgment of one's situation with those of others. Their scale (see Appendix 2) highlighted FOMO as a trait variable triggered by others'—especially friends'—favored experiences from which the person is absent. So social media feeds and hashtags that reflect other users' preferences and activities trigger FOMO (e.g., Cohen 2013; JWT 2012; Schreckinger 2014; Wallace 2014; Wortham 2011). In this work, we build on previous discussions to understand the specific antecedents of FOMO in order to provide a more in-depth conceptualization of FOMO in a nomological web of constructs.

Our conceptualization of FOMO extends previous work in several aspects: (1) Through online, laboratory, and field studies, we distinguish FOMO from the constructs of regret, anticipated regret, envy, social exclusion, and fear. We label FOMO as the “feeling of missing out” rather than the “fear of missing out” due to its conceptual distinction from fear. (2) Unlike previous work that has examined FOMO as a trait variable (Przybylski et al. 2013), we focus on its situational determinants. We explore the immediate FOMO that is triggered by information received at a particular moment, indicating a present-time orientation. Hence, regardless of individuals' propensity to experience FOMO, we examine FOMO in response to contextual factors to understand when and how it occurs. (3) While previous work associates FOMO mostly

with social media engagement, and specifically with social influence effects as induced by one's peers', friends' and social media contacts' preferences (JWT 2012; Przybylski et al. 2013), we explore other relevant antecedents. We show that FOMO is driven by the awareness of favorable and self-relevant experiences taking place in one's environment from which one is absent. However, we suggest that FOMO is not necessarily induced by a comparative judgment of one's situation with others'. Preference or popularity of unpursued activities among others (e.g., everyone attending, talking, or posting about an event) does not induce a feeling of missing out unless the unattended activities are found personally relevant and favorable. (4) We show that FOMO decreases one's intentions to repeat a current experience (i.e., redo/revisit intentions) and may also decrease the valuation of and recommendation intentions for the current experience. (5) Finally, through field studies, we demonstrate several real-life contexts where FOMO occurs.

To have a deeper understanding of FOMO, we provide a conceptual discussion on the differentiation of FOMO from the psychological constructs of regret, anticipated regret, envy, social exclusion, and fear (see Appendix 1). In summary, we argue that negative emotions like regret, anticipated regret, envy, and exclusion, as well as relative deprivation and feelings of constraint, may or may not accompany FOMO. Especially when an individual is involved in an enjoyable experience, we find that these other negative emotions do not necessarily occur along with FOMO. Throughout our studies, we demonstrate that FOMO and the hypothesized effects occur even when controlling for these feelings, none of which lead to the same mediating processes as FOMO. Next, we discuss the possible antecedents of FOMO and its consequences for consumer behavior.

### **Antecedents of FOMO**

We argue that mere exposure to or awareness of alternatives may not be adequate to elicit FOMO. Rather, we suggest that it is important to understand when and how knowledge about the existing unpursued alternative experiences leads to FOMO. Previous empirical research (Przybylski et al. 2013) as well as the popular press has associated FOMO with the perceived attractiveness of the existing alternatives and the revealed preference of others for these alternatives. Expanding on previous discussions, we explore three possible preconditions of FOMO: perceived favorability, self-relevance, and the popularity of alternative experiences.

### Favorability of alternatives

We speculate that an individual's subjective assessment of available alternatives influences their affective state. We predict that for an individual to feel bad about not being part of an experience, that experience should be perceived as favorable and desirable. Previous work on FOMO (JWT 2012; Przybylski et al. 2013) relatedly argued that, but did not provide any empirical evidence for how, this feeling is induced by knowledge of unpursued attractive and rewarding experiences. In this manuscript, we explore how favorable an individual should find the missed-out-on experiences for FOMO to occur.

The effect of attractiveness of alternatives on current relationship judgments has been explored in several contexts such as interpersonal relationships (Rusbult 1980), service evaluations (Yim, Wa Chan, and Hung 2007), and interorganizational behavior (Frazier 1983). Findings revealed that the awareness of attractive alternatives may negatively influence an individual's current relationship judgments and intentions to continue with that relationship. Importantly, even when relationship satisfaction is high, the perceived attractiveness of alternatives may lower individuals' continuation intentions with the current relationship, such as repurchase intentions (Andreassen and Lervik 1999). Relatedly, we posit that awareness of the unattended favorable experiences may induce a feeling of missing out, leading to a lower likelihood of repeating one's current activity. We hypothesize that one of the antecedents of FOMO is to perceive the existing alternatives as favorable; the higher the favorability of alternatives, the higher level of FOMO will occur.

### **Self-relevance of alternatives**

While previous conceptualizations of FOMO associated it with the attractiveness of alternatives (JWT 2012; Przybylski et al. 2013), they did not provide any boundary conditions. We argue that the mere awareness of the existing experiences may not induce FOMO if a person cannot personally relate to those experiences.

In order for an information to be processed as self-relevant, the individual needs to see it as relating to and implicating a part of themselves (Burnkrant and Unnava 1995). Self-relevant information leads to elaboration, enhances processing, and results in higher recall rates as the self-relevant information is more easily associated with the existing information in memory (Burnkrant and Unnava 1995; Symons and Johnson 1997). It is also more prominent, grabs more attention among other sources of information (Baumgartner, Sujan, and Bettman 1992), and is

more persuasive. For example, an advertisement is likely to induce more positive attitudes to the extent that viewers can relate the stimuli to themselves (Debevec and Iyer 1988).

Similarly, we argue that information about alternative experiences will be attended more and induce higher FOMO to the extent that those experiences are perceived as relevant to one's self and life experiences. On the contrary, if the person cannot relate to the information, FOMO should not occur despite how favorable those experiences might be. For example, looking at the Kardashians' attractive yacht vacation photos may not induce FOMO if that luxurious experience is not perceived as relevant to the self. By similar means, learning about a friend's exciting honeymoon experience may not create FOMO for someone who has no interest in getting married and going on a honeymoon. Although these experiences may be viewed as highly favorable, entertaining, interesting, exciting, or arousing, they should not elicit FOMO if they are not perceived to be relevant to one's life and experiences.

In sum, we propose that both the perceived favorability and self-relevance of alternative experiences are influential in inducing FOMO. Since both favorability and self-relevance are expected to increase FOMO, we hypothesize that they will have an additive effect on FOMO. More formally stated,

**H1a:** Higher perceived favorability of alternative experiences will lead to higher levels of FOMO.

**H1b:** Higher self-relevance of alternative experiences will lead to higher levels of FOMO.

**H1c:** The highest level of FOMO will be experienced when alternatives are perceived as both highly favorable and highly self-relevant.

### **Popularity of alternatives**

FOMO is often associated with social influence effects—in other words, effects that occur due to seeing others, especially social media contacts, involved in rewarding experiences (JWT 2012; Przybylski et al. 2013). Nowadays, we have increasing exposure to others' revealed preferences through social indicators such as ratings, rankings, stars, social media likes, retweets, and shares. These signs communicate social norms and lead to the inference that if something is popular, it must be good (Cialdini and Goldstein 2004). They also provide social proof about normative behavior, which often enhances the valuation of target stimuli and influences attitudes positively in various contexts such as the persuasiveness of advertisements, choice of products, and compliance with others' pro-environmental behaviors (Bearden and Etzel 1982; Goldstein,



Cialdini, and Griskevicious 2008). We suggest that there may be a direct effect of popularity of alternatives on the extent of FOMO experienced. Specifically, when alternative activities, events, conversations and other experiences are liked, approved, and preferred by others to a higher extent, not being part of those experiences might elicit higher feelings of missing out.

On the other hand, research on social influence effects reveals that individuals do not always conform to majorities; they often diverge from social groups, even from their in-group members (Jetten, Spears, and Postmes 2004) in order to highlight one's uniqueness (Snyder and Fromkin 1980), signal desired identities (Berger and Heath 2007), or set one's self apart (Cohen and Prinstein 2006). Consumers may also avoid using products and brands that are preferred by dissimilar others, regardless of the pervasive adoption and popularity of those products among others (Berger and Heath 2008). Mere preference by a majority of others may not necessarily motivate a desire to engage in an experience. Relatedly, signals of social proof and popularity (e.g., a trending topic on Twitter or a highly attended event on Facebook) may not necessarily lead to FOMO. In other words, knowing that a large proportion of people, either one's ingroup members or the general public, likes or talks about an experience may not be adequate to elicit FOMO on that experience.

In sum, both conformity and divergence are prevalent behaviors. The extant literature is inconclusive regarding the effect of others' revealed preferences—and hence the popularity of unattended experiences—on inducing FOMO. Therefore, we do not provide a specific hypothesis regarding the effect of the popularity of alternatives. Also, while the existing work associates FOMO with exposure to social media feeds, shares, and likes, there is no empirical evidence linking FOMO to the popularity of missed-out-on experiences. To understand the role of popularity in inducing FOMO, we investigate it together with favorability and self-relevance as the possible antecedents of FOMO.

### **The Consequences of FOMO: Intentions to Repeat Current Experiences**

Constant exposure to information about alternative experiences often reminds us that every activity we attend also means (at least) another event missed. We argue that FOMO (on conversations to be a part of, places to visit, parties to attend, and so on) motivates us to pursue novel experiences rather than repeat the same experience. We suggest that this occurs as a compensatory mechanism to address one's current FOMO state and to avoid experiencing FOMO

in the near future. Even when an individual feels satisfied with an activity, FOMO may motivate the pursuit of an alternative next time the individual encounters a similar decision.

Knowledge about attractive alternatives has been shown to decrease intentions to stick with a current relationship in the context of service providers (Jones, Mothersbaugh, and Beatty 2000; Yim et al. 2007), romantic partners (Impett, Beals, and Peplau 2001; Rusbult 1980) or employment (Farrell and Rusbult 1981). Individuals are often more likely to stay in a relationship when they are unaware of alternative relationships, or when alternatives are less attractive than their current relationship. The viability of alternatives increases switching intentions.

Importantly, existing attractive alternatives may decrease consumers' intentions to stick with a current relationship even when they are satisfied, suggesting that the relative attractiveness of the alternative rather than absolute satisfaction may predict future intent (Andreassen and Lervik 1999; Sánchez-García et al. 2012). For example, in experiential services, satisfied and nonregretful consumers who are more prone to variety seeking may tend to seek a new provider or an alternative in the short term rather than repeat the transaction, such as revisiting a venue (Sánchez-García et al. 2012) or repurchasing from a food service provider (Berné, Múgica, and Yagüe 2001). One reason why consumers may desire variety and display switching is to maximize their overall utility (Farquhar and Rao 1976).

Based on given evidence, we predict that consumers will stick with their current activities more when they are unaware of alternative activities, or when they do not perceive the alternatives as desirable. Without any FOMO on other options, the person will be more likely to repeat the current experience. On the contrary, awareness of the missed-out-on opportunities will motivate pursuit of other options in near future, hence lowering intentions to repeat the current activity (e.g., purchase, visit, consume).

In sum, we suggest that experiencing FOMO will negatively influence consumers' likelihood of repeating their current experience due to the salience of missed-out-on opportunities. This will translate to lower repeat purchase, visit, or consumption intentions, and will therefore be a threat to consumer loyalty. More formally stated,

**H2:** FOMO will decrease intentions to repeat a current activity (i.e., redo/revisit/repurchase intentions) and increase intentions to pursue an alternative.

To test the proposed antecedents and consequences of FOMO, we present a series of online, laboratory, and field studies. We first identify the personality variables that correlate with

FOMO (study 1) and control for their effects throughout the subsequent studies. Then, we test the hypothesized antecedents and consequences of FOMO across six studies. An online study (study 2) and its replication show that FOMO is driven by the awareness of favorable and self-relevant alternative experiences, whereas the popularity of alternatives does not influence FOMO. These studies further demonstrate that FOMO mediates the effect of self-relevance and favorability of alternative interactions on revisit intentions. In a follow-up study (study 3), we elaborate further on the effect of popularity on experiencing FOMO and show that neither the popularity of alternatives by the general public nor by one's close group of friends induces FOMO if alternatives are not perceived as personally relevant. Finally, three studies demonstrate different real-life contexts in which FOMO occurs, revealing that experiencing FOMO may decrease students' intentions to stay for summer school again in the following year (study 4A), employees' intentions to stay for overtime work again the following week (study 4B), and visitors' revisit intentions for a museum's future events (study 4C).

### **Study 1—Exploratory**

Study 1 explores the possible effects of a set of personality variables on experiencing FOMO. Przybylski et al. (2013) previously determined that FOMO is negatively related to individuals' general life satisfaction and psychological need satisfaction. In addition to these two factors, we explore the relationship of FOMO with a large set of personality variables that we think may likely be correlated with FOMO, but that have not been examined before. Specifically, we explore the relationship of FOMO with self-esteem (Wilcox and Stephen 2013), general feelings of exclusion (Dommer, Swaminathan, and Ahluwalia 2013), social comparison orientation (Gibbons and Buunk 1999), openness to experience and extraversion (Gosling, Rentfrow, and Swann 2003), curiosity (Spielberger, C. D. 1979), maximization tendency (Diab, Gillespie, and Highhouse 2008), productivity orientation (Keinan and Kivetz 2011), variety-seeking tendency (Van Trijip, Hoyer, and Inman 1996), and desire for control (Burger and Cooper 1979).

### **Method**

One hundred and fifty-three individuals from MTurk's online panel participated in our study in exchange for a cash incentive (M<sub>age</sub> = 36.03, SD = 12.10, 56% women). We manipulated FOMO with a scenario where all participants read about spending a Friday evening

at home watching a movie and having snacks. They were asked to imagine checking their social media notifications and coming across information about alternative activities. Participants were randomly assigned to one of two groups. The high FOMO group imagined feeling that they were strongly missing out on the alternative experiences; the low FOMO group imagined feeling that they were busy with their own plans and did not pay attention to the alternative activities. Participants' level of FOMO was measured with three statements adapted from Przybylski et al. (2013): "It bothers me that I am in the know about but out of touch with the activities and experiences that are going on around," "I am worried that I can't take part in the activities that are going on in my surroundings (1 = not at all true of me, 7 = very true of me)," "On this Friday evening, to what extent do you feel like you are missing out on alternative activities and experiences taking place in your environment? (1 = not at all, 7 = very much)," which were averaged into a single FOMO index ( $\alpha = .92$ ). Then, participants responded to trait measures. Finally, participants reported their social media usage (e.g., Facebook, Twitter, Instagram) in daily life (within 15 minutes of waking up/when eating breakfast/when eating lunch/when eating dinner/within 15 minutes of going to sleep; 1 = never, 7 = every time; Przybylski et al. 2013), and responded to demographic questions.

## **Results and discussion**

*Manipulation check.* Participants in the high FOMO group experienced stronger FOMO than the participants in the low FOMO group (4.13 versus 2.64;  $F(1, 151) = 30.07, p < .01$ ), confirming that the FOMO manipulation worked.

*Personality variables.* Results showed negative correlations between participants' level of FOMO and their general life satisfaction ( $r = -.296, p < .01$ ), psychological need satisfaction ( $r = -.297, p < .01$ ), and self-esteem ( $r = -.335, p < .01$ ); and positive correlations between participants' level of FOMO and their general feelings of exclusion ( $r = .440, p < .01$ ) and social comparison orientation ( $r = .466, p < .01$ ). However, no significant relationships were identified between FOMO and individuals' openness to experience, extraversion, curiosity, maximization tendency, productivity orientation, variety-seeking tendency, and desire for control (all  $ps > .05$ ). Results further revealed that FOMO was negatively correlated with age ( $r = -.157, p = .05$ ) and positively correlated with individuals' social media engagement ( $r = .348, p < .01$ ), which are consistent with previous findings (Przybylski et al. 2013).

Based on the results, we control for the effects of personality variables that are found to be correlated with FOMO (i.e., general life satisfaction, psychological need satisfaction, self-esteem, general feelings of exclusion, and social comparison orientation), as well as demographic variables (age, gender, education, and income) in the rest of the studies. The significance of our results did not change in any of the studies when these variables were used as covariates, hence they are not reported hereafter.

### **Study 2—Antecedents of FOMO and Revisit Intention as a Consequence**

Study 2 examines our hypotheses 1 and 2, exploring perceived favorability, self-relevance, and the popularity of alternative experiences as possible antecedents of FOMO. It also investigates whether FOMO decreases intentions to repeat a current activity, measured as revisit intentions to a restaurant. It further tests whether FOMO mediates the effects of hypothesized antecedents on revisit intentions.

#### **Method**

Three hundred and seventy individuals from MTurk's online panel participated in our study in exchange for a cash incentive. We excluded 30 participants who failed the attention check questions or did not write their MTurk ID correctly, leaving a final sample of 340 participants ( $M_{age} = 36.84$ ,  $SD = 11.99$ , 54% women).

A 2 (favorability: low, high)  $\times$  2 (self-relevance: low, high)  $\times$  2 (popularity: low, high) between-subjects design was used. We presented the study as a series of unrelated tasks. Participants first responded to trait measures that were identified in Study 1 as possible correlates of FOMO: life satisfaction, psychological need satisfaction, self-esteem, general feelings of exclusion, and social comparison orientation. We also measured participants' variety-seeking tendency, which may influence revisit intentions (Sánchez-García et al. 2012). These measures were used as control variables.

Next, participants read about dining at a newly opened restaurant in town. They were asked to imagine checking their messages and social media notifications during dinner and coming across information about alternative activities (see Appendix 2). We manipulated perceived favorability of alternatives by telling the participants that they found the alternative activities more (vs. less) favorable than the dining experience. We manipulated self-relevance by indicating that the alternative activities related to their life and experiences very much (vs. not at

all) and that they could (vs. not) easily picture themselves attending those activities. Participants then wrote about the alternative activities that they imagined taking place concurrently. We manipulated the popularity of alternatives as follows. After participants submitted their list of alternative activities concurrently taking place, participants were asked to wait for their answers to be compared with the answers of other respondents. After a five-second wait, participants were presented with other respondents' ratings of the alternative activities, which we manipulated to be more (vs. less) favorable than the dining experience. Then, participants answered the question "How likely are you to revisit Restaurant X? (1 = not at all, 7 = very much)."

Next, we measured FOMO with the same three statements used in Study 1 ( $\alpha = .93$ ). Finally, participants filled out a series of momentary affective measures to rule out alternative explanations, all measured on a seven-point scale: feelings of constraint, relative deprivation, anxiety, envy (not at all/very much), exclusion (not at all excluded/very much excluded, not at all left out/very much left out;  $\alpha = .93$ ), and mood (sad/happy, in a bad mood/in a good mood;  $\alpha = .93$ ).

## **Results and discussion**

*Manipulation check.* Participants responded to three statements in a randomized order. "I find the alternative activities and experiences that exist in my environment... (1 = less favorable, 7 = more favorable) than what I am doing on this Friday evening" was used to check the manipulation of perceived favorability of alternatives. An ANOVA on perceived favorability revealed only a main effect of favorability ( $F(1, 331) = 283.96, p < .01$ ). Participants in the high (vs. low) favorability group found the alternatives more favorable than their Friday evening activity ( $M = 5.22$  vs.  $2.66$ ). "To what extent do you think the alternative activities and experiences relate to your life and your experiences? (1 = not at all, 7 = very much)" was used to check the manipulation of self-relevance. An ANOVA on self-relevance indicated only a main effect of self-relevance ( $F(1, 331) = 589.17, p < .01$ ). Participants in the high (vs. low) self-relevance group rated the alternative experiences as more self-relevant ( $M = 5.79$  vs.  $2.42$ ). "Other people find the alternative activities and experiences that exist in my environment on this Friday evening... (1 = less favorable, 7 = more favorable) than what I am doing on this Friday evening" was used to check the manipulation of popularity of alternatives. An ANOVA on popularity of alternatives revealed only a main effect of popularity ( $F(1, 331) = 378.59, p < .01$ ). Participants in the high (vs. low) popularity group thought that other respondents found the

alternatives more favorable than the participant's Friday evening activity ( $M = 5.77$  vs.  $2.83$ ). The analyses revealed that manipulations of the three independent variables worked as intended.

*FOMO.* First, we examined if and how our three independent variables—self-relevance, favorability, and popularity of alternatives—influenced the extent of FOMO experienced. An ANOVA revealed that the popularity of alternative experiences did not have a main effect on FOMO, nor did it interact with any of the other two variables ( $ps > .05$ ). As summarized in table 1, results revealed main effects of self-relevance ( $F(1, 332) = 97.28, p < .01$ ) and favorability of alternatives ( $F(1, 332) = 94.95, p < .01$ ) on FOMO (Tables follow references throughout). Importantly, these main effects were qualified by a significant two-way interaction ( $F(1, 332) = 5.45, p < .05$ ). A simple effects test revealed that when perceived favorability of alternatives was high, participants in the high self-relevance group experienced higher FOMO than those in the low self-relevance group ( $5.03$  vs.  $3.15$ ;  $F(1, 332) = 76.14, p < .01$ ). Similarly, when perceived favorability of alternatives was low, participants in the high self-relevance group experienced higher FOMO than those in the low self-relevance group ( $3.17$  vs.  $2.01$ ;  $F(1, 332) = 27.71, p < .01$ ). These results show that while the popularity of alternatives does not have an effect on the extent of FOMO experienced, both self-relevance and perceived favorability of alternative experiences influence FOMO. FOMO was experienced most strongly ( $M = 5.03$  on a seven-point scale) when the alternatives were found both more self-relevant and more favorable than the current activity. Controlling for the affective measures did not change the significance of our results.

*Revisit intention.* Next, we conducted an ANOVA on our key dependent variable, revisit intentions, with self-relevance, favorability and popularity of alternatives as the three independent variables. Once again, popularity of alternatives did not have an effect on revisit intentions, nor did it interact with any of the other two variables ( $ps > .05$ ). The results revealed the main effects of self-relevance ( $F(1, 332) = 9.86, p < .05$ ) and favorability of alternatives ( $F(1, 332) = 38.59, p < .01$ ) on FOMO. These main effects were qualified by a significant two-way interaction ( $F(1, 332) = 4.17, p < .05$ ). A simple effects test showed that when the perceived favorability of alternatives was high, participants in the high self-relevance group had lower revisit intentions than those in the low self-relevance group ( $3.97$  vs.  $4.74$ ;  $F(1, 332) = 13.74, p < .01$ ). When perceived favorability of alternatives was low, there was no effect of self-relevance of alternatives on revisit intentions ( $5.37$  vs.  $5.20$ ;  $F(1, 332) = .59, p > .05$ ). Results showed that

revisit intention was the lowest ( $M = 3.97$ ) when FOMO was the highest ( $M = 5.03$ ), in which case the alternatives were found highly self-relevant and more favorable than the current activity. (Tables follow References.)

*Mediated moderation.* We examined whether FOMO would mediate the effects of perceived favorability and self-relevance of alternatives on revisit intentions. We tested for the conditional direct, conditional indirect, and conditional total effects of favorability on revisit intentions through FOMO as the self-relevance of alternatives changed, using a conditional process model (number 8) with 5,000 bootstrapped samples (Hayes 2013). We used the favorability of alternatives as the independent variable, self-relevance as the moderator, average FOMO index as the mediator, and revisit intentions as the dependent variable. The index of mediated moderation was significant ( $b = -.19$ , 95% CI  $[-.41, -.04]$ ). The results revealed that the effect of favorability  $\times$  the self-relevance of alternatives on FOMO was significant ( $b = .71$ ,  $p < .05$ ). The effect of FOMO on revisit intentions, when we held the favorability and self-relevance of alternatives constant, was also significant ( $b = -.27$   $p < .01$ ), suggesting that the first stage of the mediation model (favorability–FOMO) was moderated. The conditional indirect effect of favorability on revisit intentions through FOMO was significant for participants both in the low and high self-relevance groups with a 95% CI (bootstrap confidence interval) wholly below zero in both groups  $[-.51, -.17; -.76, -.30]$ . The direct interaction effect of favorability  $\times$  the self-relevance of alternatives on revisit intentions was not statistically significant ( $b = -.41$ ,  $p > .05$ ), meaning that after we accounted for FOMO, the effect of favorability on revisit intentions did not depend on the self-relevance of alternatives. The results of this mediated moderation suggest that the overall moderation of the treatment effect is eliminated once the mediating process is controlled (Muller, Judd, and Yzerbyt 2005). Repeating the analyses by adding the measured personality variables and the feelings as covariates did not affect the significance of our results. Also, none of the measured effects (mood, feelings of constraint, relative deprivation, anxiety, exclusion, and envy) mediated the favorability  $\times$  self-relevance interaction on revisit intentions. The results of the mediated moderation are summarized in Figure 1 (Figures follow references throughout). (Figures follow References.)



*Discussion.* The results of study 2 show that the favorability and self-relevance, but not the popularity, of ongoing alternative experiences influence the generation of FOMO. Findings also show that learning about the ongoing favorable and self-relevant experiences during a dinner experience may decrease individuals' intentions to revisit the restaurant due to a feeling of missing out on other experiences.

We conducted an additional study with a more realistic manipulation of popularity of alternatives: Facebook's "Like" button images ("0" versus "over 100" "likes"). We replicated the results of study 2 by showing that both perceiving alternatives as favorable and self-relevant, but not necessarily popular, were preconditions of FOMO. Also, perceiving the alternatives as favorable and self-relevant led to FOMO and decreased individuals' intentions to revisit the restaurant (see details of this replication study in Appendix 1). These results jointly suggest that the popularity of the unattended experiences does not induce a feeling of missing out unless these experiences are found favorable and personally relevant.

Extant work on FOMO associates it strongly with social influence effects, especially with one's peers', friends' and social media contacts' preferences (JWT 2012; Przybylski et al. 2013). One possible argument for why we didn't find an effect of the popularity of alternatives in inducing FOMO in study 2 and its replication study may be that we kept the popularity manipulations too general. Specifically, in study 2, the popularity of the alternatives was manipulated by indicating other MTurk respondents' favorability of the missed-out-on experiences. In the replication study, popularity of the alternatives was manipulated by using Facebook "likes." To elaborate more deeply on the role of popularity in generating FOMO, we present a follow-up study. Study 3 explores the possibility that type of popularity (in the general public vs. among close friends) impacts FOMO differentially.

### **Study 3—The Role of Different Types of Popularity in Inducing FOMO**

Our results so far revealed that the popularity of alternatives does not have a significant effect on inducing FOMO. Study 3 takes a step further and partitions the popularity construct into two components. Specifically, it explores whether the popularity of the unattended experiences among the general public versus among one's close friends have differential effects on inducing FOMO.

## Method

One hundred and sixty-six individuals from MTurk's online panel participated in the study. After excluding nine participants who failed the attention check questions, we had a sample of 159 participants ( $M_{age} = 35.22$ ,  $SD = 11.14$ , 44% women).

A 2 (self-relevance: low, high)  $\times$  2 (popularity type: general public, close friends) between-subjects design was used. The same scenario from study 1 involving a Friday night at home was used. Self-relevance was manipulated as in study 2. Participants were told that the ongoing event related to their life and experiences very much (vs. not at all) and that they could (vs. not) easily picture themselves attending the event. Participants in the popularity among general public condition read the following: "You see that an event in your town has become a 'trending topic' on Twitter. Many people seem to be attending or talking about it. This event seems to be very popular among the general public." Those in the popularity among close friends group read the following: "You see on Twitter that your close group of friends are attending or talking about an event taking place in town. This event seems to be very popular among your close friends." Participants then wrote about the alternative event that they imagined taking place concurrently. FOMO was measured with the same three statements, which were averaged into a single FOMO index ( $\alpha = .89$ ). Participants further responded to trait measures and to momentary affective measures; feelings of constraint, deprivation, envy, jealousy, exclusion, fear, regret, anticipated regret, and cognitive dissonance.

## Results and discussion

*Manipulation check.* Participants responded to three statements in a randomized order. "To what extent does the indicated event relate to your life and your experiences?" and "To what extent can you picture yourself involved in the indicated event? (1 = not at all, 7 = very much)" were used to check the manipulation of self-relevance ( $\alpha = .95$ ). An ANOVA on the self-relevance of alternatives revealed only a main effect of self-relevance ( $F(1, 155) = 385.78$ ,  $p < .01$ ). Participants in the high (vs. low) self-relevance group rated the alternative event as more self-relevant ( $M = 6.28$  vs.  $2.17$ ). "The indicated event seems to be quite popular among... (1 = my close group of friends, 7 = the general public)" was used to check the manipulation of popularity type. An ANOVA on popularity type revealed only a main effect of type of popularity ( $F(1, 155) = 381.01$ ,  $p < .01$ ). Participants in the general public (vs. close friends) popularity group found the alternatives more popular among the general public than among their close

friends ( $M = 5.85$  vs.  $1.68$ ). The analyses revealed that manipulations of the independent variables worked as intended.

*FOMO.* We examined the effect of self-relevance and popularity type on the extent of FOMO experienced. An ANOVA revealed that participants experienced a higher level of FOMO when they perceived the alternatives as self-relevant (vs. not), ( $3.80$  vs.  $2.36$ ;  $F(1, 155) = 31.23$ ,  $p < .01$ ). However, the level of FOMO experienced in the popularity among the general public versus the popularity among close friends did not differ ( $3.17$  vs.  $2.99$ ;  $F(1, 155) = .50$ ,  $p > .05$ ), nor did it interact with self-relevance ( $p > .05$ ). Controlling for the affective measures did not change the significance of our results.

*Discussion.* Consistent with previous studies, the results of study 3 reveal that the popularity of an unpursued activity does not induce FOMO unless the person finds the activity personally relevant. Furthermore, study 3 shows that whether an ongoing event is very popular among the general public or among one's close friends does not differentially influence FOMO. Overall, our results extend previous definitions of FOMO by providing that self-relevance and favorability of alternative experiences dominate the effect of their popularity in inducing FOMO.

So far, we have explored the antecedents and consequences of FOMO in hypothetical situations. In the next three studies, we explore real-life contexts wherein FOMO occurs. We directly manipulate participants' FOMO and explore their intentions to repeat a current experience. Also, we explore a set of additional dependent variables that support our main DV. Specifically, we examine intentions to recommend current experience to others (study 4A), momentary satisfaction with the current experience (study 4B), and valuation of the current experience (study 4C) as a result of FOMO.

#### **Study 4A—Summer School Lab Study**

Study 4A explores intentions to repeat a current activity in a more controlled lab setting. Specifically, we examine whether experiencing FOMO during summer school decreases students' intentions to attend summer school the following year, and their tendency to recommend the program to their friends. This study was conducted at a European university where the average summer school attendance rate was 30%.

We first ran a pretest to identify the most favored and self-relevant summer vacation destinations among the university students. Fifty undergraduates ( $M_{age} = 21.6$ ,  $SD = 1.19$ , 55%

women) were randomly approached on campus and were asked to indicate summer vacation destinations that they liked the most and viewed as self-relevant. It could be a place where the participants had previously visited or could easily picture themselves visiting. A total of 19 destinations were mentioned, including 8 different countries and 11 cities within those countries. The most popular 4 countries and 4 local cities were used as stimuli in the study (see Appendix 2 for selected stimuli).

## **Method**

A total of 83 summer school students ( $M_{age} = 21.4$ ,  $SD = 1.68$ , 58% female) who were enrolled in a marketing course participated in the study in exchange for course credit, and were randomly assigned to either the control or FOMO group. The FOMO group read about a survey conducted with university students about their most preferred vacation places, which were presented with attractive vacation photos; the control group read general information about the university along with campus photos. As a manipulation check, participants indicated the extent to which they experienced FOMO (“In this moment, to what extent do you feel like you are missing out on alternative activities and experiences taking place in your environment?” 1 = not at all, 7 = very much). Intentions to attend summer school again in the following year and willingness to recommend summer school to friends were measured with two questions: “How much are you willing to stay for summer school next year?” “How much will you recommend summer school to your friends? (1 = not at all, 7 = very much)”. Finally, participants responded to measures of relative deprivation, regret, anticipated regret, anxiety, feelings of constraint, exclusion, and mood.

## **Results and discussion**

*Manipulation check.* As expected, an ANOVA revealed that the FOMO group experienced stronger FOMO than the control group (4.68 vs. 3.71;  $F(1, 81) = 6.13$ ,  $p < .05$ ).

*Redo and recommendation intentions.* A one-way ANOVA revealed that compared to the control group, the FOMO group was less likely to attend summer school again (4.05 vs. 5.17,  $F(1, 81) = 5.44$ ,  $p < .05$ ), and was marginally less willing to recommend it to others (5.22 vs. 5.83,  $F(1, 81) = 3.46$ ,  $p = .07$ ). Also, participants in the FOMO group experienced marginally higher feelings of constraint (3.56 vs. 2.88,  $F(1, 81) = 3.13$ ,  $p = .08$ ) and relative deprivation (3.80 vs. 3.05,  $F(1, 81) = 3.51$ ,  $p = .07$ ), but there were no differences in other affective states (i.e., anticipated regret, anxiety, exclusion, and mood; all  $ps > .05$ ). Most importantly, there were

no differences in participants' feelings of regret for being in summer school between the FOMO and the control groups (2.17 vs. 1.83,  $F(1, 81) = 1.57, p > .05$ ). When feelings of constraint and relative deprivation were controlled for, the level of significance across analyses remained unchanged.

We further analyzed the data after excluding 16 participants who indicated that they were planning to graduate the following year, so would not attend summer school again ( $N = 67$ ,  $M_{age} = 20.95$ ,  $SD = 1.47$ , 58% female). While the overall mean values were higher for willingness to attend summer school the following year, significance of the results did not change. The FOMO group was less likely to attend summer school again (4.53 vs. 5.61,  $F(1, 65) = 5.08, p < .05$ ), and was marginally less willing to recommend it to others (5.09 vs. 5.79,  $F(1, 65) = 3.41, p = .07$ ).

*Discussion.* Study 4A suggests that students attending summer school may experience FOMO upon learning about favorable and self-relevant summer vacation spots. This may decrease both students' intentions to attend summer school again as well as the likelihood that they will recommend it to their friends.

#### **Study 4B—Office Field Study**

Study 4B explored intentions to repeat a current activity as a result of FOMO in a field study. We predicted that overtime at the office is one context wherein FOMO may easily occur. We investigated how employees' likelihood of staying for overtime work again and their momentary job satisfaction are influenced by FOMO.

We first ran a pretest where we selected 10 highly-rated after-work events that were taking place in the city within that month. Thirty individuals with similar demographics to the target group ( $M_{age} = 32.73$ ,  $SD = 4.34$ , 60% women) read brief descriptions and saw pictures of the events, which were taken from a widely used event website in the country ([www.biletix.com](http://www.biletix.com)). Participants used a seven-point scale (1 = not at all, 7 = very much) to rate events' favorability—"How favorable do you think this event would be?/How desirable do you think this event is?" (minimum  $\alpha = .92$ )—and relevance to the self—"To what extent can you picture yourself attending this event?/To what extent does this event relate to your life and your experiences?" (minimum  $\alpha = .88$ ).

A repeated-measures analysis of variance test revealed that the 10 events significantly differed in their perceived favorability ( $F(9, 261) = 4.42; p < .01$ ) and self-relevance ( $F(9, 261) =$

5.72;  $p < .01$ ) (see table 2 for ratings). We picked the six activities that received the highest ratings in terms of both favorability and self-relevance scores (see Appendix 2 for selected stimuli).

## **Method**

We conducted the study with employees of six different companies including two telecommunications companies, two consulting firms, an advertising agency, and an e-commerce start-up. Seventy-four individuals from these six companies who were working at the office after 18:00 participated in our study (Mage = 30.1, SD = 4.51, 57% women). Participants were typically expected to work 45 hours a week from 8:00/9:00 to 17:00/18:00, and they all indicated staying for overtime work at least occasionally. Participation was voluntary and the participants entered a lottery to win one of five pairs of movie tickets. The experiment was conducted in the local language to make the stimuli realistic and to prevent any language-related barriers in collecting data.

Participants were randomly assigned to FOMO versus control groups. The FOMO group read information about six events that were concurrently taking place in town illustrated with event photos; the control group read (neutral) information about the geopolitical importance of the city illustrated with pictures. FOMO was measured with the same three statements that were previously used ( $\alpha = .88$ ). As the DVs, participants' willingness to stay for overtime work in the following week ("How much would you be willing to stay for overtime work next week if your boss asks you to?") and momentary job satisfaction ("How satisfied do you feel with your job at the present moment?") were measured (1 = not at all, 7 = very much). Feelings of constraint, relative deprivation, anxiety, envy, exclusion, and mood were measured to be used as covariates. One potential explanation we had not addressed yet is that people who experienced FOMO could perceive that there are more alternative activities concurrently taking place than the control group could. In order to capture this, participants were asked to guess how many events could be going on in the city that evening and their responses were used as a covariate (four-point scale: 1 = less than 10 events, 2 = 10–20 events, 3 = 21–30 events, 4 = more than 30 events).

## **Results and discussion**

*Manipulation check.* As expected, a manipulation check confirmed that the FOMO group experienced stronger feelings of missing out than the control group (5.38 vs. 4.63;  $F(1, 71) = 5.37, p < .05$ ).

*Redo intentions and momentary job satisfaction.* A one-way ANOVA revealed that the FOMO group indicated lower willingness to stay for overtime work again in the following week (3.54 vs. 4.49;  $F(1,72) = 6.53$ ;  $p < .05$ ) and lower momentary job satisfaction (3.65 vs. 4.32;  $F(1,72) = 4.96$ ;  $p < .05$ ). There were no significant differences in participants' feelings of anxiety, constraint, envy, exclusion, or mood (all  $ps > .05$ ), while relative deprivation was marginally higher in the FOMO group (4.34 vs. 3.62;  $F(1,67) = 2.76$ ;  $p = .10$ ). The significance of the results did not change when controlling for the affective states. Finally, we found no differences between the FOMO and control groups in terms of their guesses of the number of alternative events (about 21–30 captured by 3.09 vs. 3.29;  $F(1,66) = .82$ ;  $p > .05$ ). Therefore, the results could not be explained by differences across groups in terms of the number of events they imagined taking place.

*Discussion.* Study 4B demonstrates that FOMO may be experienced during overtime work hours upon learning about the favorable and self-relevant events taking place in one's environment. In turn, it decreases individuals' willingness to stay for overtime work again in the near future, and may also decrease their momentary job satisfaction.

### **Study 4C—Museum Field Study**

Studies 4A and 4B explored FOMO realistically among individuals who were involved in constraining and not highly enjoyable experiences such as attending summer school and working overtime. In this final study, we expand our exploration in two ways. First, we investigate whether FOMO is experienced during highly enjoyable experiences and whether it leads to the same hypothesized effects. Second, in addition to testing individuals' intentions to repeat the current activity, we also examine whether FOMO influences how consumers evaluate their current experience.

To select the stimuli to be used in the main study, we ran a similar pretest to the one presented in study 4B. A total of 55 participants from MTurk's online panel (Mage = 37.13, SD = 13.16, 53% women) read brief descriptions and saw pictures of eight events that were typical of the events that took place in the city. The same favorability (minimum  $\alpha = .92$ ) and self-relevance (minimum  $\alpha = .94$ ) measures from study 4B were used.

A repeated-measures analysis of variance test revealed that the eight events significantly differed in their perceived favorability and self-relevance ( $F(8, 432) = 2.12; p < .05$ ); ( $F(8, 432) = 2.25; p < .05$ ), (see table 2 for ratings). We picked the top-rated six activities in terms of both favorability and self-relevance to be used in the main study (see Appendix 2 for selected stimuli).

## **Method**

We conducted an experiment during a science museum's social event located in the Southeast United States. This was an after-work event open to people over the age of 21. The entrance fee was \$24.00 and all of the 400 tickets were sold out. During the event, visitors could sample beer and participate in interactive games across 26 different stations. We had a table where the visitors could stop by to fill out a five-minute survey for a chance to enter a lottery to win a free museum membership for the whole year. Participants completed the survey either on iPads or on papers provided to them.

Sixty-seven participants (Mage = 29.51, SD = 6.02, 46% female) stopped by our table and were recruited in exchange for a chance to win a free museum membership. Participants were randomly assigned to FOMO versus control groups. As expected, mean enjoyment level during the event was high ( $M = 6.37$  on a seven-point scale; 1 = not at all enjoyable, 7 = very much enjoyable). While the FOMO group read information about six events that were concurrently taking place in town, the control group was provided with (neutral) information about local landmarks. As a manipulation check, participants indicated the extent to which they experienced FOMO ("In this moment, to what extent do you feel like you are missing out on alternative activities and experiences taking place in your environment?," 1 = not at all, 7 = very much). The participants' intentions to revisit the museum were measured with two questions. First, their revisit intentions were explicitly asked: "How likely are you to come to the next museum event (vs. attend an alternative activity)? (1 = not at all, 7 = very likely)." Second, they were asked to choose between two gifts in case they won the lottery: a 12-month free membership to this museum or a 4-month free membership to four different museums in the area. This question tested whether the visitors were interested in repeating an experience similar to the current one or were motivated to seek other experiences. Then, we tested whether FOMO negatively influenced individuals' evaluations of their current experience by asking how much the participants would be willing to accept (WTA on a \$0–\$40 sliding scale) to quit their current activity and attend an alternative activity. Participants' variety-seeking tendency and their guesses about how many



events could be going on in the area that evening were also measured to be used as covariates. Participants were debriefed and thanked upon responding to measures on feelings of constraint, relative deprivation, and regret.

## **Results and discussion**

*Manipulation check.* As expected, an ANOVA revealed that the FOMO group experienced stronger FOMO than the control group (4.09 vs. 3.21;  $F(1, 65) = 4.22, p < .05$ ).

*Redo intentions and WTA.* A one-way ANOVA revealed that compared to the control group, the FOMO group was less likely to come to the next museum event (and thus more likely to attend an alternative event), (5.48 vs. 6.12,  $F(1, 65) = 6.43, p < .05$ ). Also, a chi-square analysis revealed that the FOMO group preferred a free membership to four different museums (as opposed to a free membership to the same museum) at a higher extent than the control group (76% vs. 24%,  $X^2(1) = 4.75, p < .05$ ), supporting the hypothesis that FOMO decreased individuals' revisit intentions. Importantly, the significance of the results did not change when controlling for individuals' trait variety-seeking tendency, which could have influenced their revisit intentions. Finally, the FOMO group was willing to accept a lower dollar amount to leave the museum event and attend an alternative activity compared to the control group (\$22.0 vs. \$28.3,  $F(1, 65) = 5.66, p < .05$ ). The FOMO group's WTA was lower than the entrance fee for the event (\$24), suggesting that FOMO might even lead to incurring costs. Participants' guesses about the number of events taking place in the city that evening did not differ between the FOMO and control groups (14.62 vs. 15.52,  $F(1, 65) = 13.49, p > .05$ ). Also, there were no differences in participants' feelings of relative deprivation, constraint, or regret (all  $ps > .05$ ), suggesting that the results could not be explained by changes in these affective measures.

*Discussion.* The findings of study 4C show that FOMO can be experienced even during enjoyable experiences upon learning about existing favorable and self-relevant experiences, and that FOMO can decrease intentions to repeat the current activity (as opposed to becoming involved in an alternative activity). The results further suggest that FOMO may lead to a decreased valuation of one's current experience and therefore may motivate switching intentions to alternative experiences. Most interestingly, we observed these FOMO-related effects despite the fact that individuals did not experience any negative feelings during the museum event.

## General Discussion

FOMO has attracted much attention with increased reliance on digital technologies and use of social networking platforms that enable real-time information flow (e.g., Cohen 2013; Hedges 2014; Herman 2012; JWT 2012; Schreckinger 2014; Wortham 2011). Despite its prevalent use in daily language and extensive press on FOMO, there has been limited empirical research on it (Przybylski et al. 2013). Responding to the calls for further exploration of this construct, the present research establishes the ubiquity of FOMO, examines FOMO in a nomological web of constructs, identifies its antecedents and consequences for consumer behavior, and presents real-life contexts wherein FOMO may be experienced.

Extending previous findings (Przybylski et al. 2013), our work explores FOMO as a state variable and focuses on its situational determinants. We demonstrate that FOMO is driven by the awareness of favorable and self-relevant experiences taking place in one's environment from which the person is absent. Contrary to previous work, which associates FOMO strongly with social influence effects, especially with one's peers', friends' and social media contacts' preferences (JWT 2012; Przybylski et al. 2013), our findings reveal that the popularity of unpursued activities among majorities (e.g., Facebook "likes"; Twitter trending topics; everyone attending, talking about, or posting about an event) does not induce FOMO unless the unattended activities are found personally relevant and favorable. Contributing to the literature on social proof (Cialdini and Goldstein 2004) and social influence effects (Berger and Heath 2008), our work reveals that FOMO is not an inevitable consequence of popularity indicators that individuals are exposed to. We further show that experiencing FOMO decreases intentions to repeat current experiences and may decrease the valuation of and recommendation intentions for the current experience. Hence, our results suggest that FOMO poses a threat to loyalty by decreasing consumers' willingness to repeat a current purchase, visit, or consumption behavior.

Moreover, both conceptually and empirically, our work shows that FOMO is a distinct construct from the seemingly related constructs of regret, anticipated regret, constraint, relative deprivation, and fear. The results of seven studies reveal that although other negative emotions like relative deprivation and feelings of constraint may accompany FOMO during not highly enjoyable experiences (e.g., while taking courses at summer school or during overtime work), we show that FOMO may even be experienced during highly enjoyable experiences (e.g., a fun social event) in the absence of these negative feelings.

As social media usage increases among 2 billion active users around the world who, on average, use social networking sites 106 minutes a day (statista 2016), FOMO is more prevalent than ever before. While FOMO may be triggered by both online and offline information flow, social media evidently plays an important role in obtaining information about one's social environment. Facebook, Twitter, Instagram, Snapchat, and other platforms promote active communication and instant exposure to information about the events, activities, and conversations taking place. Through posts, videos, tweets, and check-ins, we see the experiences happening in real time. FOMO's ubiquity as a psychological phenomenon and social media buzzword is driving brands to understand the marketing implications of FOMO. The imperative is twofold: brands need to influence consumers and brands need to stay relevant. To achieve this, we summarize how marketers can leverage FOMO under two categories: fostering and fighting FOMO.

### **Implications**

*Fostering FOMO.* As perpetual innovation is necessary to survive intense competition, brands need to be present where the consumer is. It used to be sufficient for brands to catch consumers at home in front of the TV or in front of their computers. Now, in order to capture consumers' attention, brands need to catch consumers on the go and even when they are already engaged in an activity. That is where the opportunity is to create FOMO and drive consumers away from competition. For example, imagine that you are a restaurant manager trying to attract customers. Rather than reaching those who are sitting at home with the hopes that they will remember and choose you next time they dine, you might want to leverage the GPS information and capture the consumers near your restaurant. If they are dining at a competitor, your communication of appealing deals might create FOMO and disrupt their experience. Furthermore, we would predict that the next time that consumer is thinking of dining out, your restaurant might make it to their consideration set.

Marketers can also turn consumers' experiences of FOMO to their advantage by reacting in a timely manner to FOMO-inducing stimuli. Spotting the sources of FOMO through digital tracking provides an opportunity for marketers to associate their brands with desired experiences, or to make use of consumers' FOMO states by targeting them with relevant and timely deals. For example, the #FOMO hashtag was mostly used with "Coachella" during the month when the popular music festival was held (3/24/2016–4/24/2016; [www.hashtracking.com](http://www.hashtracking.com)). This provides a

chance for brands to benefit from consumers' heightened FOMO states, and to interact with and provide festival-related offers to these consumers on digital channels.

However, importantly, our findings highlight the significance of personal relevance and the favorability of ongoing activities in inducing FOMO. Our results show that the popularity and social proof appeals (e.g., Facebook “likes” and Twitter trending topics) are not adequate to induce feelings of missing out, unless individuals perceive the target stimuli as favorable and relevant to themselves. From a managerial perspective, this implies the importance of using targeted and personalized messages (Arora et al. 2008), rather than mass messages, to reach consumers selectively.

Another way to foster FOMO is to use content marketing to make consumers feel like they are at a disadvantage without a product or brand, or without being involved in an experience. Brands can use captivating digital content, messaging, and engaging imagery to create this feeling. For example, they can fuel the perception that users need to engage with a product—otherwise, they risk missing out (e.g., “Avoid FOMO. Mark your calendars with the date of our next party.”). Relatedly, brands can induce FOMO by adopting scarcity appeals such as strategically being unavailable next to their competition to create an increased desire for the product for future consumption.

*Fighting FOMO.* Our findings suggest that experiencing FOMO may decrease consumers' intentions to repeat current experiences, and hence is a threat to their loyalty. Maintaining loyal customers is crucial, especially since the cost of attracting new ones is increasing (Kumar and Petersen 2005). High loyalty has advantages such as more positive word-of-mouth, higher resistance to counter-attitudinal arguments (Dick and Basu 1994), and less favorable evaluations of competing offers (Jain and Maheswaran 2000). It also creates a higher willingness to sacrifice in order to maintain a relationship such as paying a premium price and investing in that relationship (Chaudhuri and Holbrook 2001; Thomson, MacInnis, and Park 2005). In this digital era, consumers can reach information anytime, anywhere, and can therefore easily be distracted from their ongoing experiences. It is crucial to build active and engaging relationships with consumers to prevent switching intentions as a result of experiencing FOMO. Relatedly, providing incentives to consumers that will encourage repeat purchases, such as on-the-spot reward program offers (e.g., collecting points or receiving discounts or rebates for future

purchases through mobile apps) when customers are most prone to FOMO, may help increase customer retention.

Our findings also imply that ignorance might actually be bliss. Motivating consumers to focus on their current experiences, and to appreciate and enjoy their time, may alleviate the negative consequences of FOMO. For example, marketing communications messages may motivate consumers to slow down and enjoy the moment (JWT 2012). Adopting the countercultural approach of encouraging users to unplug is another means of avoiding FOMO. REI's #OptOutside campaign, which encouraged consumers to avoid Black Friday madness, is a great example of how marketers can help out consumers even during a highly FOMO-dependent event.

Some marketers are already trying to combat FOMO by proactively informing consumers about the upcoming events or marketing deals (e.g., the FOMOsonar, NOMO—"no more missing out," and Fomo mobile applications). These tools can successfully be positioned to prevent customers from experiencing FOMO. Marketers can also take advantage of consumers' FOMO states by helping them combat or refrain from FOMO in other ways. For example, they can pacify FOMO by acting as curators, collecting content that helps consumers stay in the know (e.g., by providing behind-the-scenes videos or access to materials). Relatedly, marketers can leverage virtual reality, an increasingly popular marketing tool, to help consumers artificially experience a real or imagined environment. In order to decrease FOMO, marketers can provide consumers with almost realistic sensory experiences like sight, touch, hearing, and smell, along with increased ability to interact with other consumers. This way, consumers would feel that they are part of an event rather than a faraway spectator.

### **Directions for future research**

Future work can further explore other variables that foster or fight FOMO in diverse domains. One direction is to explore FOMO as a distractor or focuser. Such work would contribute to the growing stream of research that demonstrated the importance of mindfulness for subjective well-being (Brown and Ryan 2003), as well as the effects of distractions during experiences (e.g., Shiv and Nowlis 2004) and decision making (e.g., Lerouge 2009).

The relationship of FOMO with perceived time sufficiency and time-related stress is yet another research avenue worth exploring. Extant research depicts that feeling pressed for time negatively affects subjective well-being (e.g., Aaker, Rudd, and Mogilner 2011). Whether FOMO

induces perceived time insufficiency, and the related consequences thereto, may provide valuable theoretical and managerial insights.

In addition to FOMO, developing digital tools and changing human interactions have led to rise of other novel concepts like FOBO (fear of being offline) and JOMO (joy of missing out). While it is considered by some a digital detox that helps them to find inner peace, switching off the Internet and not being contactable is often associated with severe anxiety due to missing out on news and the inability to validate one's presence to others digitally; this is known as FOBO. FOBO may even lead to a preference for staying online over hanging out (Mahajan 2015), as is often reflected in Millennials' Internet addiction. In contrast to FOMO or FOBO, JOMO indicates finding enjoyment in, rather than feeling bad about, skipping something with the realization that it is not possible to pursue a limitless number of activities at any moment in life (Burkeman 2014). Although these concepts have attracted popular press attention, their influence and consequences are yet another area for future work.

## Appendix 1

### **Differentiation of FOMO from other Psychological Constructs**

#### **Regret and anticipated regret**

It could be argued that FOMO has a similar psychological process to regret and anticipated regret. Regret refers to the negative evaluation of a past decision (Landman 1987). It motivates people to think about counterfactuals—i.e., what different outcomes would have occurred if they had decided differently. Anticipated regret is the negative emotion resulting from imagining future regret before making a decision (Janis and Mann 1977). Hence, regret is experienced about decisions made in the past, and anticipated regret is experienced for possible future decisions.

We argue that FOMO is distinct from regret and anticipated regret in several aspects. First, these three constructs signify different time orientations. FOMO entails a present-time orientation about one's current situation, whereas regret is a retrospective feeling about past decisions, and anticipated regret is a prospective feeling experienced for future decisions not yet made.

Second, regret and anticipated regret result from a person's own actions or inactions, thus incorporating responsibility and self-blame. Personal agency differentiates regret and anticipated regret from other negative emotions such as anger, anxiety, fear, or disappointment (Zeelenberg and Pieters 2007). FOMO, however, does not always involve personal liability. While engaged in an experience, an individual may learn about alternatives and experience FOMO. Since the alternatives were unknown at the time of decision making, or attending the alternatives is not possible in the moment, feelings of responsibility and self-blame should not occur. Nevertheless, if the current FOMO results from a deliberate decision made in the past, regret may accompany the FOMO. Similarly, if attending the alternative experience is currently possible, then anticipated regret may be experienced along with FOMO. Therefore, we argue that FOMO occurs independently of regret and anticipated regret, but may be accompanied by these emotions.

Third, regret requires the realization that another decision would have been better, hence is experienced over a negative outcome (Zeelenberg and Pieters 2007). As shown in study 4C, FOMO may be experienced even during highly enjoyable experiences when individuals do not

experience negative emotions about their current activity. Mere awareness of the desirable alternatives may induce FOMO, even though a person may be content with the current situation.

### **Envy**

Envy arises from someone else's superior achievement, success, advantages, or possessions (Parrott and Smith 1993). It is a detrimental emotion that may decrease well-being and result in willingness to reduce the perceived gap with the envied person, sometimes at the expense of harming that person (Miceli and Castelfranchi 2007). Envy is also explained as a feeling of admiration with a component of hostility (Smith and Kim 2007). It occurs as a result of comparing one's situation with those of others, especially due to upward comparisons (Van de Ven, Zeelenberg, and Pieters 2009).

The main distinction between FOMO and envy is that envy necessitates a target person, while FOMO might simply result from the awareness of ongoing alternative experiences. If FOMO is experienced upon learning about others' experiences and induces a comparison of one's situation with others', then envy may accompany the FOMO. Yet FOMO may be experienced upon learning about any kind of desirable event or activity (e.g., a sales event) without specific knowledge of other individuals. Therefore, we argue that FOMO is an emotion distinct from envy, but that envy may accompany FOMO.

### **Social exclusion**

Social exclusion refers to being excluded and left alone by the society or by a reference group (Williams 2007). Social connection is a fundamental human need, and feeling excluded may lead to detrimental psychological, emotional, and behavioral consequences.

Although deliberate social exclusion might induce FOMO, it is not a necessary condition. FOMO often results in situations where an individual becomes aware of alternatives without the deliberate intention of other individuals. As with envy, feeling socially excluded may or may not accompany FOMO. For example, a person may experience both FOMO and social exclusion upon seeing photos of a friend's party that she was not invited to. However, one may experience FOMO without feeling excluded, such as upon learning about a newly released Oscar-nominated movie on a Friday evening while working at the office.

### **Fear**

We conceptualize FOMO as the "feeling of missing out" rather than the "fear of missing out." Fear is defined as an emotional response to threat or danger (Smith and Lazarus 1993), with



higher levels of threat leading to greater fear. It is a subjective feeling, as people fear different things at different levels. Fear typically induces a two-step response (Morales, Wu, and Fitzsimons 2012; Rosen and Schulkin 1998). Initially, it creates a strong physical state of immobility. Bodily reactions to fear include increased activity in the nervous system, high tension, opened eyes and mouth, raised eyebrows, and a wrinkled forehead, together with respiration, blood pressure, and heart rate changes (Izard 1991). Then, as the threat approaches, people display avoidance and a tendency to escape.

FOMO bears some similarities to fear, yet is a distinct construct. Like fear, FOMO is an unpleasant affective state and it requires effort to cope with. As with fear, FOMO is a subjective feeling that may be experienced at varying levels toward different types of stimuli. However, fear is a broader and overarching construct that refers to an emotional state induced in all mammals (Rosen and Schulkin 1998). FOMO has specifically become prominent with the increased real-time information flow among people. It stems from individuals' cognitive awareness of the things they are not a part of, and hence it is triggered by external cues—unlike fear, which is genetically inherent. FOMO more restrictedly occurs in (not all) individuals. For example, while fear is inherent to the human condition, people living in a tribe isolated from society, without any knowledge of time or the lives of others, may not experience FOMO on alternative experiences.

Another distinction of FOMO from fear is the induced reactions. Fear causes one to freeze up when a threat is approaching, display bodily reactions and escape once the threat has become unavoidable. FOMO, on the other hand, is not likely to induce as rigid bodily responses that cause one to freeze up. It is arguably a more enduring, anxious, and psychologically depriving feeling (JWT 2012; Przybylski et al. 2013), and hence indicates a less intense affective state than fear. Based on these distinctions, we argue that the FOMO that people experience upon learning about desirable unpursued experiences is an affective state distinct from fear.

### **Study 2 Replication—Antecedents of FOMO and Revisit Intentions as a Consequence**

The purpose of this study was to replicate study 2 by adopting a more realistic manipulation of the popularity of alternative experiences. Instead of providing other survey respondents' ratings (as high vs. low) of the alternative activities, we used Facebook's "Like" button images to signal their popularity. In addition, we measured and controlled for participants' feelings of fear, regret, anticipated regret, and FOMO as a trait variable (Przybylski et al. 2013).

## Method

Three hundred and seventy-two individuals from MTurk's online panel participated in our study in exchange for a cash incentive. We excluded 24 participants who failed the attention check questions and had a final sample of 348 participants (Mage = 39.69, SD = 13.22, 52% women).

The procedure was similar to that used in study 2. We employed a 2 (perceived favorability: low, high)  $\times$  2 (self-relevance: low, high)  $\times$  2 (popularity: low, high) between-subjects design.

The same manipulation scenario as in study 2 was used with some changes. Differently, the manipulation scenario highlighted Facebook as the context. Participants were told to imagine themselves checking their "Facebook notifications" rather than "messages and social media notifications," and the popularity of alternative experiences was manipulated by using Facebook's "Like" button images. Upon writing about the alternative activities that could be going on, participants were told that these alternative activities did not receive any "likes" on Facebook depicted by "0 Likes" image (vs. activities that received more than 100 "likes" on Facebook depicted by "+100 Likes" image), indicating the popularity (vs. unpopularity) of the alternatives.

After the manipulation, participants responded to the same DV (i.e., revisit intentions), FOMO, and control measures that were used in study 2. Additionally, participants responded to measures on feelings of fear (1 = not at all, 7 = very much), regret ("To what extent do you feel regret for having chosen your Friday evening activity?"), anticipated regret about not attending the alternatives ("How bad will you feel if you don't attend the alternative activities that are going on in your environment on this Friday evening? 1 = not at all, 7 = very much)" and to trait FOMO measures (Przybylski et al. 2013).

## Results and discussion

*Manipulation check.* Manipulations of the three independent variables (i.e., perceived favorability, self-relevance, and popularity of alternatives) worked as intended. An ANOVA revealed that participants in the high (vs. low) favorability group found the alternatives more favorable than their Friday evening activity (5.61 vs. 2.26;  $F(1, 340) = 424.85, p < .01$ ); participants in the high (vs. low) self-relevance group rated the alternative experiences as more

self-relevant (5.91 vs. 1.96;  $F(1, 340) = 895.79, p < .01$ ); participants in the high (vs. low) popularity group thought that the alternative activities were very popular (vs. not popular at all) (5.50 vs. 2.38;  $F(1, 340) = 434.39, p < .01$ ). No other effects were significant.

*FOMO.* The three FOMO items were averaged into a single FOMO index ( $\alpha = .92$ ). An ANOVA revealed that the popularity of alternative experiences did not have a main effect on FOMO, nor did it interact with any of the other two variables ( $ps > .05$ ). As summarized in table 1, results revealed the main effects of self-relevance ( $F(1, 340) = 56.53, p < .01$ ) and favorability of alternatives ( $F(1, 340) = 75.05, p < .01$ ) on FOMO. These main effects were qualified by a significant two-way interaction ( $F(1, 340) = 9.85, p < .05$ ). A simple effects test revealed that when the perceived favorability of alternatives was high, participants in the high self-relevance group experienced higher FOMO than those in the low self-relevance group (4.84 vs. 3.08;  $F(1, 340) = 57.32, p < .01$ ). Also, when perceived favorability of alternatives was low, participants in the high self-relevance group experienced higher FOMO than those in the low self-relevance group (2.89 vs. 2.17;  $F(1, 340) = 9.51, p < .01$ ). These results support study 2's findings by showing that the popularity of alternative experiences doesn't have an effect on the extent of FOMO experienced, while both self-relevance and perceived favorability of alternatives influence FOMO. Again, FOMO was experienced most strongly ( $M = 4.84$  on a 7-point scale) when individuals found the alternatives self-relevant and more favorable than their current activity. When we added in the affective measures (including fear, regret, and anticipated regret) into the analyses, the significance of the results did not change. The 10-item trait FOMO measure (Przybylski et al. 2013), averaged into a single FOMO trait index ( $\alpha = .90$ ), was positively correlated with participants' state FOMO ( $b = .716, t = 5.97, p < .01$ ). However, it did not interact with any of the measured independent variables ( $ps > .05$ ), and controlling for trait FOMO did not change the significance of the results.

*Revisit intention.* Next, we conducted an ANOVA on our key dependent variable—revisit intentions—with self-relevance, perceived favorability, and popularity of alternatives as the three independent variables. Again, popularity of alternatives did not have an effect on revisit intentions, nor did it interact with any of the other two variables ( $ps > .05$ ). Results revealed a main effect of favorability on revisit intentions ( $F(1, 340) = 19.38, p < .01$ ), while the self-relevance of alternatives did not have an effect on revisit intentions ( $F(1, 340) = 1.53, NS$ ). Importantly, there was a significant interaction between the effects of self-relevance and

perceived favorability of alternatives on revisit intentions,  $F(1, 340) = 6.55, p < .05$ . A simple effects test showed that when perceived favorability of alternatives was high, participants in the high self-relevance group had lower revisit intentions than those in the low self-relevance group (4.61 vs. 5.11;  $F(1, 340) = 7.28, p < .01$ ). When the perceived favorability of alternatives was low, there was no difference in revisit intentions between the high and low self-relevance groups (5.52 vs. 5.35;  $F(1, 340) = .87, p > .05$ ). Consistent with the findings of study 2A, results revealed that revisit intentions were the lowest ( $M = 4.61$ ) when FOMO was the highest ( $M = 4.84$ ) in which case the alternatives were found highly self-relevant and more favorable than the current activity.

*Mediated moderation.* Next, we tested whether FOMO mediated the effects of favorability and self-relevance of alternatives on revisit intentions. For this purpose, we tested for the conditional direct, conditional indirect, and conditional total effects of favorability on revisit intentions through FOMO as relevance of alternatives changes using a conditional process model with 5,000 bootstrapped samples. The index of mediated moderation was significant ( $b = -.19, 95\% \text{ CI} [-.37, -.07]$ ). The results revealed that the effect of favorability  $\times$  the self-relevance of alternatives on FOMO was significant ( $b = 1.03, p < .01$ ). The effect of FOMO on revisit intentions, when we held the favorability and self-relevance of alternatives constant, was also significant ( $b = -.19, p < .01$ ), suggesting that the first stage of the mediation model (favorability–FOMO) is moderated. The conditional indirect effect of favorability on revisit intentions through FOMO was significant for participants both in the low and high self-relevance of alternatives groups, with a 95% CI (bootstrap confidence interval) wholly below zero in both groups  $[-.33, -.07; -.58, -.20]$ . The direct interaction effect of favorability  $\times$  the self-relevance of alternatives on revisit intentions was not statistically significant ( $b = -.47, p = .07$ ), meaning that after we accounted for FOMO, the effect of favorability on revisit intentions did not depend on the self-relevance of alternatives. Repeating the analyses by adding the measured personality and demographic variables did not affect the significance of our results, and none of the measured emotions (mood, feelings of constraint, relative deprivation, anxiety, exclusion, envy, fear, regret, and anticipated regret) mediated the favorability  $\times$  the self-relevance interaction on revisit intentions. Consistent with study 2's findings, the results of this mediated moderation reveal that the overall moderation of the treatment effect is reduced when the mediating process is controlled. These results are summarized in Figure 2.

*Discussion.* Using a more realistic manipulation of the popularity of alternatives, results of this study further support that the favorability and self-relevance, but not the popularity of alternative experiences influence FOMO, and that FOMO decreases intentions to repeat a current experience. Findings also show that while trait FOMO explored by previous research (Przybylski et al. 2013) is positively correlated with individuals' state FOMO, controlling for its effects does not influence the significance of the revealed findings.

## Appendix 2

### **FOMO as a Trait Scale (Przybylski et al. 2013)**

I fear others have more rewarding experiences than me.

I fear my friends have more rewarding experiences than me.

I get worried when I find out my friends are having fun without me.

I get anxious when I don't know what my friends are up to.

It is important that I understand my friends' "in-jokes."

Sometimes, I wonder if I spend too much time keeping up with what is going on.

It bothers me when I miss an opportunity to meet up with friends.

When I have a good time, it is important for me to share the details online (e.g., updating status).

When I miss out on a planned get-together, it bothers me.

When I go on vacation, I continue to keep tabs on what my friends are doing.

### **FOMO Manipulation Scenario Used in Study 2 and the Replication Study**

Please imagine that on a Friday evening, you are having dinner at newly opened Restaurant X, which you have been eager to try. As you are sitting, you check your social media notifications and messages (*in the replication study: Facebook notifications*) on your cell phone. Through conversations and posts, you become aware of the many alternative activities and experiences that are concurrently taking place in your environment. You spend some time looking at these news and notifications.

You find the activities and experiences taking place in your environment **more (less) favorable than your Friday evening activity.**

And the alternative activities and experiences **(do not) relate to you, your life and your experiences very much (at all), meaning that you can (cannot) easily picture yourself involved in those experiences.**

Please spend a few minutes to visualize yourself on this Friday evening as if you are really experiencing it. List below and describe in as much detail as possible the alternative activities and experiences that could be going on.

*In study 2: Five seconds pass with a timer shown on the survey page. Please wait a few seconds while we compare your answers with other respondents' answers about the alternative activities that could be taking place on this Friday evening.*

The majority of the respondents indicated that **they find the alternative activities which you mentioned above more (less) favorable than the dining experience.**

*In the replication study:*

You realize that the alternative activities that you have seen on Facebook have all received **more than 100 “Likes” (have not received any “Likes”)**, signaling the high (un)popularity of those activities.



#### **Stimuli Used in Study 4A**

##### **FOMO group**



We have conducted a survey with undergraduate students to find out how students are spending this summer. Survey results show that about 80% of the students are currently on holiday at various local and international vacation destinations. Students have indicated Cesme,

Bodrum, Akyaka, and Marmaris as their most preferred summer vacation places within the country; and the Greek islands, Italy, Spain, and the United States as their most preferred international summer vacation destinations. Using interrail and work-and-travel programs come up as the most fun and the lowest-cost traveling options especially for far destinations. According to survey results, students' main motivations in choosing a vacation spot are to have sea/sand/sun vacations while having fun with friends and family, to explore new places and meet new people, and to do activities that they will not have time to do after graduation.

### Control group



### History of Koç University

Koç University was founded in 1993 as a nonprofit private university in Istanbul, Turkey. Since 2000, it has been located in its current campus area in Rumeli Feneri, sprawling over a 62-acre estate. With the Colleges of Social Sciences and Humanities, Administrative Sciences and Economics, Science, Engineering, Law, Nursing, and Medicine, Koç University offers 22 undergraduate, 32 graduate, and 18 PhD programs.

Koç University is supported by the resources of the internationally renowned Vehbi Koç Foundation. Besides Koç University, the Vehbi Koç Foundation, founded by Vehbi Koç, has invested in several educational institutions such as Sadberk Hanim Museum, Atatürk Library, and Koç High School.



## Stimuli Used in Study 4B

### FOMO group



#### Event 1: Sertab Erener at Jolly Joker

One of the best Turkish pop vocalists, Sertab Erener, is meeting her fans at Jolly Joker tonight. Celebrating her 23rd year on stage, she is singing the best of her songs. Be ready for an unforgettable night.



#### Event 2: Akbank Jazz Festival

It is the night of jazz lovers...the queen of jazz Carmen Lundy is performing at Sabanci Museum. She is not only a strong vocalist, but also one of the most creative composers of jazz with more than 100 songs charted in the top 10 on several jazz lists.



#### Event 3: Istanbul Coffee Fest

A variety of coffee and novel tastes...different brewing methods, workshops, and a lot more are at Istanbul Coffee Fest, which takes place in the historic Haydarpasa Railway Station.





#### Event 4: Acik Mikrofon Stand-up

The best way to end your day. Five talented, cool, and funny comedians put on their stand-up specials. Come join their interactive conversations to catch some big laughs after work.



#### Event 5: Diary of a Madman

One of Gogol's greatest short stories put on stage. Following the format of a diary, the story shows the descent of a protagonist into insanity. You'll be amazed watching a man's gradual slide from sanity.



#### Event 6: After-Work Party

Turned into a classic for an evening out. Relaxed atmosphere of unwinding from a day of hard work over a drink or two. This is a great way to enjoy your evening with friends and colleagues.



## Control group



### Geopolitical Importance of Istanbul

Spread over an area of 7.500 km<sup>2</sup> that is 150 km long, and 50 km wide, Istanbul has become the biggest and the most crowded city of Europe. Established where Asian and European continents were split with a narrow strait, and therefore built on two continents, Istanbul is the only city separated by the sea. With its history of over 2,500 years, Istanbul has become an important commerce center because of its establishment in this strategic location where land meets sea. The historical city of Istanbul is surrounded by the Marmara Sea, the Bosphorus Strait, and the Golden Horn. The Old City is spread over seven hills of the triangular peninsula. It has been of much significance throughout history because of being at the joining point of two continents, being the gateway to the hot climates and oceans, and being the outer reach of the Silk Road extending to Europe. Because of its geopolitical importance, the city was the capital of three great empires, namely those of the Romans, the Byzantines, and the Ottoman Turks, and was ruled by more than 120 emperors and sultans over 1,600 years.

## Stimuli Used in Study 4C

### FOMO group



#### Event 1: Storytelling Event

This is a night of storytelling. In an entertainment spot in Durham, locals are taking the stage to tell five-minute stories around a specific theme announced for the evening. Are you ready to be touched by real experiences?



#### Event 2: Street Ramblers Event

Great harmony along with talented instrumentals. A bluegrass band steeped in traditional, newgrass, and rock music is performing in downtown Durham. These guys are soon expected to release their albums!



#### Event 3: Identity Exhibition

This exhibition taking place in a cultural spot of Durham will take you on a tour through identity. It provides experience with hands-on interactive stations that show how your genetics, brain chemistry, and even your friends and social groups help make you who you are.





#### **Event 4: Brewing Event**

A local Durham brewery is welcoming customers to have an entertaining night while learning about the entire brewing process, from grain to glass. People get to taste unique and delicious local beers of the area.



#### **Event 5: Selected Works in Exhibition**

Selected works of famous national artists are exhibited in a local Durham gallery. The exhibit features new installations, paintings, and sculpture. The objects speak to all audiences.



#### **Event 6: TGIT Event**

People will gather with their friends at the TGIT live music event with local performers. Dancing all night on this TGIT music event is a fun way to prepare for the weekend.



## Control group



### Brief Information about Durham

Durham is a city in the U.S. state of North Carolina. It is the seat of Durham County, though portions also extend into Wake County in the east and Orange County in the west. Durham is the core of the four-county Durham–Chapel Hill Metropolitan Area, which has a population of 534,578 as of the U.S. Census 2013 Population Estimates. The U.S. Office of Management and Budget also includes Durham as a part of the Raleigh–Durham–Chapel Hill Combined Statistical Area. It is the home of Duke University and North Carolina Central University, and is also one of the vertices of the Research Triangle area.

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**Table 1**

Summary of Mean Ratings for Experienced FOMO and Intentions to Redo the Current Activity

		<b>Study 2 (Study 2 Replication) MTurk</b>		<b>Study 4A Summer School</b>		<b>Study 4B Office</b>		<b>Study 4C Museum Event</b>	
		High Self-relevance	Low Self-relevance	FOMO	Control	FOMO	Control	FOMO	Control
<b>Level of FOMO</b>	High Favorability	5.03 (4.84)	3.15 (3.08)	4.68	3.71	5.38	4.63	4.09	3.21
	Low Favorability	3.17 (2.89)	2.01 (2.17)						
	High Favorability	3.97 (4.61)	4.74 (5.11)						
<b>Redo Intentions</b>	Low Favorability	5.37 (5.52)	5.20 (5.35)	4.05	5.17	3.54	4.49	5.48	6.12

Note. Scales range from 1 (not at all) to 7 (very much).

**Table 2**

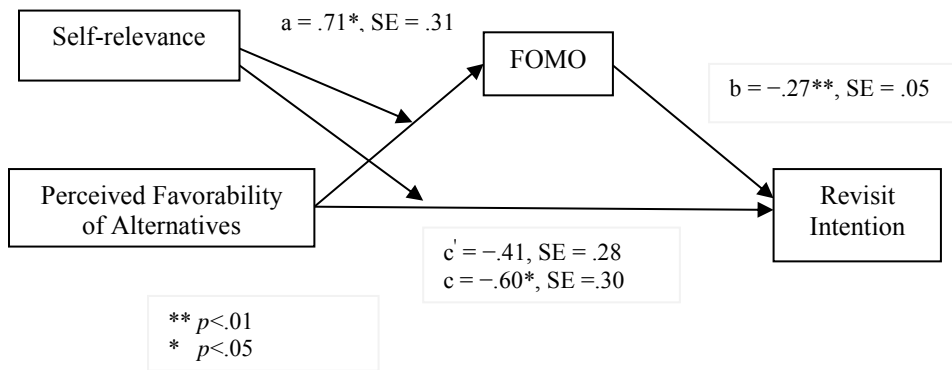
Summary of Mean Ratings for Stimuli Used in Study 4B and 4C Pretests

	Study 4B ( <i>N</i> = 30)		Study 4C ( <i>N</i> = 55)	
	Favorability	Self-relevance	Favorability	Self-relevance
Event 1	4.74	4.23	4.25	3.94
Event 2	5.17	4.85	4.44	3.75
Event 3	5.38	5.25	4.61	4.03
Event 4	4.75	4.25	4.42	3.44
Event 5	5.32	4.97	4.47	4.15
Event 6	4.80	4.52	4.35	3.50
Event 7*	4.47	4.20	4.13	3.28
Event 8*	4.47	4.22	3.45	2.99
Event 9*	4.53	4.12		
Event 10*	3.40	2.75		

Note. Events marked with \* indicate stimuli included in the pretest, but not selected for the main study.

**Figure 1**

Study 2: FOMO Mediates the Effect of Favorability  $\times$  Self-relevance of Alternatives Interaction on Revisit Intention



**Figure 2**

Study 2 Replication: FOMO Mediates the Effect of Favorability  $\times$  Self-relevance of Alternatives Interaction on Revisit Intention

