1-1-2016

The Detrimental Effects of External Objectives in Consumer Behavior

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The Detrimental Effects of External Objectives in Consumer Behavior

Abstract
Consumers often engage in behaviors that are meaningful or self-relevant. These behaviors are typically guided by internal processes and motivations; as a result, extrinsic objectives can be disruptive. In my dissertation, I explore two distinct areas in which an external goal or incentive can be detrimental for consumers. In my first essay, I examine the utility people derive from their experiences as a function of their photo-taking goals. Virtually all people strive to maximize the happiness they obtain from their experiences, both living them in the moment and reliving them in the future. In a world where photo-taking is becoming increasingly common in almost every experience, it is important to understand how consumers’ photo-taking objectives influence how much they enjoy their experiences. In two field and four laboratory studies, we find that relative to taking photos to preserve memories for oneself, taking photos to share with others decreases consumers’ enjoyment of an experience. This effect occurs because taking photos to share increases anxiety from self-presentational concern. In other words, taking photos with the goal of sharing them with others, that is, with an extrinsic social motivation, can make rewarding activities less enjoyable. In my second essay, I investigate individuals’ effectiveness in persuading others to donate to a cause as a function of whether they were incentivized. Many individuals are intrinsically motivated to perform prosocial acts; that is, they are internally driven to help others. For activities like this that provide their own inherent reward, the introduction of an external motivator, such as a monetary incentive, can reduce effort or persistence on simple quantifiable tasks. But no work has examined the effect of incentives on prosocial tasks that require special skills or abilities, such as communicating and convincing others to do good deeds. In three fundraising experiments, we find that monetary incentives make individuals less effective in persuading others to donate to a cause by undermining their perceived sincerity. In other words, extrinsic material rewards can “crowd out” individuals’ genuineness of expression and thus their ability to gain support for a cause.

Degree Type
Dissertation

Degree Name
Doctor of Philosophy (PhD)

Graduate Group
Marketing

First Advisor
Deborah Small

Second Advisor
Gal Zauberman

Subject Categories
Advertising and Promotion Management | Marketing

This dissertation is available at ScholarlyCommons: http://repository.upenn.edu/edissertations/1600
THE DETRIMENTAL EFFECTS OF EXTERNAL OBJECTIVES IN CONSUMER BEHAVIOR

Alixandra Barasch

A DISSERTATION

in

Marketing

For the Graduate Group in Managerial Science and Applied Economics

Presented to the Faculties of the University of Pennsylvania

in

Partial Fulfillment of the Requirements for the
Degree of Doctor of Philosophy

2016

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DEDICATION

This dissertation is dedicated to the memory of my two grandfathers – Richard Barasch and Dr. Robert Sheriff. As patriarchs of my family, their consistent encouragement, wisdom, and love helped me persevere through the challenges I faced during my doctoral studies. While they were not able to see me receive my PhD, nothing fulfills me more than knowing how proud they would have felt that day.
ACKNOWLEDGMENT

Over the past five years, I have received support and encouragement from a great number of individuals. No words can adequately express my gratitude for all they have done for me, but I will do my best to convey as much as the limits of language will allow.

I owe enormous gratitude to the mentors who have guided me through the journey of learning and self-discovery that is graduate school. First, to my advisors. Gal Zauberman is the primary reason I chose to attend Wharton, one of the best decisions I have ever made. His steadfast guidance, big-picture insights, and deep conversations taught me how to turn messy ideas into clean studies and ultimately into compelling papers. Deborah Small has instilled the highest research standards in me and inspired me with her utmost devotion to her students. Her expertise, precision of thought, and patience have taught me how to be a critical, thoughtful researcher. The training I received from these two scholars surpassed anything I ever expected, and it is because of them that I feel confident and eager to continue my own research and eventually pass down my knowledge to my own students in the future.

Thanks also to my three committee members. Kristin Diehl was a profound influence on me, a mentor who generously shared her time and ideas and showed me how to pursue research with passion and rigor. Rom Schrift was one of my biggest sources of strength on the job market, and taught me how to approach the field with a sincere, caring perspective while maintaining rigorous research standards. Paul Rozin was a steady source of enthusiasm for my current ideas and a lively proponent of new ones that
promise to be rewarding to pursue. And to my collaborators, Jonah Berger, Maurice Schweitzer, and Rod Duclos, who each took a chance on working with me long before I was a fully-formed researcher, and who each deserve credit for a great deal of my early training.

I have been incredibly fortunate to have classmates who were more than just colleagues, but also collaborators, mentors, and friends. To Emma Levine, my frequent co-author, who is always there to listen and offer her advice, and with whom I have spent countless hours pursuing ideas and discovering what it means to conduct good research. To Cindy Chan, who is so incredibly generous with her time and knowledge, and who has been an essential source of encouragement and understanding over the years. To Jonathan Berman, for teaching me about precision in research thinking and for the many deep conversations that gave me new perspectives on pretty much every topic under the sun. To Eric Schwartz for his energy and enthusiasm, and for making me feel like I always have someone rooting for me. To Evan Weingarten, who helped our department develop into a community, and on whose statistical skills and memory for random papers I grew quite dependent. And to Amit Bhattacharjee, my biggest source of support and inspiration, the person who helped me stay sane through the ups and downs of graduate school, and my partner in a relationship that fulfills me in more ways than he knows. He is one of the smartest and most sincere people I know, a truly rare combination.

Finally, I must express my deep gratitude for the infinite support of my family. None of this would have been possible without their love, patience, and dedication. My dad was my rock, my most reliable sounding board and confidant, and the person I could
count on to drop everything to provide me with sage advice. My mom, who led the way with her own Ph.D., was my selfless caretaker, always there to share the highlights and frustrations of academia, and my go-to person when I was down and in need of a cheerful conversation and broader perspective. My sister Katie, who has become my best friend, and whose proximity to Philadelphia meant frequent visits, hugs, and insightful discussions for which I was always grateful. And my brother Lance, whose natural inquisitiveness and commitment to principle have helped me become a better and more balanced human. I cannot overstate how much having these four people in my corner has strengthened and inspired me during my graduate studies. Thank you for believing in me.
ABSTRACT

THE DETRIMENTAL EFFECTS OF EXTERNAL OBJECTIVES IN CONSUMER BEHAVIOR

Alixandra Barasch
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Consumers often engage in behaviors that are meaningful or self-relevant. These behaviors are typically guided by internal processes and motivations; as a result, extrinsic objectives can be disruptive. In my dissertation, I explore two distinct areas in which an external goal or incentive can be detrimental for consumers. In my first essay, I examine the utility people derive from their experiences as a function of their photo-taking goals. Virtually all people strive to maximize the happiness they obtain from their experiences, both living them in the moment and reliving them in the future. In a world where photo-taking is becoming increasingly common in almost every experience, it is important to understand how consumers’ photo-taking objectives influence how much they enjoy their experiences. In two field and four laboratory studies, we find that relative to taking photos to preserve memories for oneself, taking photos to share with others decreases consumers’ enjoyment of an experience. This effect occurs because taking photos to share increases anxiety from self-presentational concern. In other words, taking photos
with the goal of sharing them with others, that is, with an extrinsic social motivation, can make rewarding activities less enjoyable. In my second essay, I investigate individuals’ effectiveness in persuading others to donate to a cause as a function of whether they were incentivized. Many individuals are intrinsically motivated to perform prosocial acts; that is, they are internally driven to help others. For activities like this that provide their own inherent reward, the introduction of an external motivator, such as a monetary incentive, can reduce effort or persistence on simple quantifiable tasks. But no work has examined the effect of incentives on prosocial tasks that require special skills or abilities, such as communicating and convincing others to do good deeds. In three fundraising experiments, we find that monetary incentives make individuals less effective in persuading others to donate to a cause by undermining their perceived sincerity. In other words, extrinsic material rewards can “crowd out” individuals’ genuineness of expression and thus their ability to gain support for a cause.
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CHAPTER 1

THE OTHER SIDE OF SHARING: HOW PHOTO-TAKING GOALS IMPACT EVALUATIONS OF EXPERIENCES

Alixandra Barasch
Gal Zauberman
Kristin Diehl

ABSTRACT

People often share their experiences with others who were not originally there, an act that provides them with a variety of personal and interpersonal benefits. However, most of the work on this form of sharing has examined situations where the decision to share one’s experience is only salient after the experience is over. We are interested in a distinct and novel aspect of this process: when the decision to share is already salient during the experience and hence can impact the experience itself. We examine this research question within the context of photo-taking, which has become a ubiquitous and integral part of people’s consumption experiences, with hundreds of millions of photos shared everyday through social media. Across two field and four laboratory studies, we find that relative to taking pictures for oneself (e.g., to preserve one’s memories), taking pictures with the intention to share them with others (e.g., to post on Facebook) reduces enjoyment of experiences. This effect occurs because taking photos to share increases self-presentational concern during the experience, which can not only reduce enjoyment
directly, but also indirectly by lowering engagement with the experience. We identify several factors that affect self-presentational concern and thus moderate the effect of photo-taking goals on enjoyment, such as individual differences in self-consciousness and the closeness of the intended audience.
From vacations and holidays to funny moments with their children, people often share their experiences with others who were not originally there. This focus on sharing experiences is not surprising, as the experiences people accumulate over the course of their lives come to define them as individuals and dictate their life satisfaction (Van Boven and Gilovich 2003; Carter and Gilovich 2012). Moreover, sharing such experiences with others who were not present has a variety of benefits, such as boosting people’s mood and sense of meaning when the actual sharing occurs (e.g., Reis et al. 2010; Lambert et al. 2013).

Most of the work on sharing one’s experiences with others has examined situations in which the sharing occurs only after the experience is over. But people often anticipate sharing an experience while it unfolds; that means that the sharing goal is salient during the experience itself. The current research investigates this distinct and novel aspect of the sharing process: how might consumers’ intention to share an experience in the future affect enjoyment of that experience itself?

In this paper, we investigate this research question in the context of photo-taking: how taking photos with the intention to share them influences consumers’ enjoyment of an experience. To do so, we contrast this sharing goal with another common goal in taking photos: preserving memories for oneself. Across two field studies and four laboratory studies, we find that when the intention to share photos with others is salient, it decreases consumers’ enjoyment of an experience relative to taking photos to preserve memories for the self. This is because taking photos to share involves the prospect of being evaluated or judged by others, increasing self-presentation concern and thereby decreasing enjoyment. We find that besides reducing enjoyment directly, self-
presentational concern can also hurt enjoyment indirectly by lowering engagement with the experience. We identify boundary conditions and moderators that affect the degree of self-presentational concern, such as the extent to which an individual cares about how they are perceived by others, the salience of the ability to select photos after taking them, and the closeness of the intended audience.

Importantly, we isolate the effect of these two photo-taking goals on hedonic utility from the experience itself, rather than utility from other aspects of photo-taking (e.g., consuming photos of the experience at a later point, or others’ reactions to the photos). In other words, even though sharing photos with others may provide additional utility at a later point when photos are actually shared, we propose that pursuing this sharing goal, in and of itself, creates disutility and reduces enjoyment from the experience as it unfolds. Thus, unlike previous work that documents how sharing can benefit consumers after an experience has ended, this paper focuses on enjoyment during the experience itself, and thus contributes to our understanding of how intending to share can affect consumers even in advance of actual sharing behavior.

**SHARING EXPERIENCES**

Experiences are the building blocks of people’s lives and are essential to their well-being. Indeed, people spend significant time and money engaging in experiences, both ordinary (e.g., movies) and extraordinary (e.g., vacations; Bhattacharjee and Mogilner 2014). Much of the work examining the importance of experiences has done so by comparing experiential purchases to material ones, showing that experiences lead to more happiness than material purchases (e.g., Van Boven and Gilovich 2003; Van Boven
2005; Carter and Gilovich 2012). For example, this work has demonstrated that with experiences, people are less likely to suffer from hedonic adaptation (Nicolao, Irwin, and Goodman, 2009), regret from their actions (Rosenzweig and Gilovich 2012), and unpleasant social comparisons (Carter and Gilovich 2010). Another reason that experiences provide more enduring satisfaction than material possessions is that they connect people to other individuals. Humans derive value and happiness from their social relationships (e.g., Leary and Baumeister 2000; Myers 2000; Diener and Seligman 2002), and experiences are more likely to be shared with others.

Sharing experiences can happen in one of two ways. First, people can participate in experiences jointly with others. For example, experiencing an event with another person (as opposed to alone) can heighten enjoyment of that experience by facilitating the human need to belong and feel connected (Raghunathan & Corfman, 2006; Ramanathan and McGill 2007; McFerran and Argo 2014). Not surprisingly, social experiences are often preferred to solitary ones (Caprariello and Reis 2013; Aknin, Dunn, Sandstrom, and Norton 2013).

Second, and the basis of this paper, people frequently seek to tell others who were not necessarily there with them about their experiences. That is, experiences also promote social connection by stimulating people to share stories and converse with others about them, increasing satisfaction with the experience after it is over (Gilovich, Kumar, and Jampol 2015). Indeed, the majority of people’s everyday speech focuses on themselves and their personal experiences (Emler 1990; Dunbar, Marriott, and Duncan 1997; Landis and Burtt 1924), and the internet has made it even easier to share personal stories with audiences anywhere in a variety of ways, with over 80% of social media communications
focused on users themselves and their experiences (Naaman, Boase, and Lai 2010). Telling others about one’s experiences after they happen can have both personal and interpersonal benefits. For example, sharing experiences after the fact can boost people’s positive affect and meaning (Langston 1994; Lambert et al. 2013) and can increase their feelings of closeness and trust with their audience (Beike, Brandon, and Cole 2016; Reis et al. 2010).

Though sharing experiences with others can bring people additional utility after an experience has ended, to the best of our knowledge, no prior work has examined how the salience of the sharing goal during an experience might impact the enjoyment people gain from the experience itself. While there are many ways to share our experiences with others, we focus on photo-taking in our work because its features are well-suited to investigate this novel aspect of the sharing process. In the next section, we describe several reasons why we use the photo-taking context as a tool to study the effect of intending to share an experience with others.

**TAKING PHOTOS TO SHARE**

We examine how taking photos with the intention to share them later affects people’s enjoyment during an experience. Three key aspects of the photo-taking context present a unique opportunity to investigate this novel side of the sharing process.

First, compared to sharing an experience in many other ways (e.g., recounting it verbally), sharing photographs requires an action (i.e., taking photos) while the experience unfolds. Hence, sharing photos may be particularly likely to make the intention to share salient during the experience, even if the actual act of sharing comes
later. Second, photos may be especially effective for sharing experiences, since they can provide others with vivid, concrete details that would otherwise be difficult or impossible to communicate verbally. While most research on sharing experiences has focused on verbal or written communication of that information, sharing via photos is not well understood.

Third, photo-taking and photo-sharing has become a ubiquitous and integral part of a growing range of consumption experiences. Indeed, as technology has advanced, photos have become one of the most common ways to share experiences, and several widely-used products have emerged to facilitate this sharing goal. People share hundreds of millions of photos daily through social media platforms, and this trend is only increasing. For example, the public photo-sharing network Instagram has over 300 million users, who post more than 70 million photos per day (Systrom 2014; Pershan 2014). Similarly, even though Facebook users can post a variety of content items, photo sharing is one of the most common activities, with over 350 million photos uploaded every day (Facebook 2013).

Companies are trying to capitalize on the photo sharing phenomenon as well. For example, some restaurants now include hashtags on their menus encouraging consumers to take photos and share them on social media (Mancini 2014), some hotels give guests a free night for posting a photo of their stay on Instagram (Veix 2013), and certain ski resorts provide consumers the ability to post photos to social networking sites straight from the ski slopes with free WiFi on top of the mountain (Boyd 2011).

Despite this recent explosion in the prevalence of sharing photographs, and the promotion of such behavior by many firms, little prior work has examined the
psychological consequences of taking and sharing photographs on consumers’ experiences. Understanding the effects of encouraging this photo-taking goal is important both for marketers, who hope to provide enjoyable experiences to consumers, and for consumers themselves, who hope to enjoy the experiences they consume as much as possible.

PHOTO-TAKING GOALS

How common it is for consumers to explicitly take photos to share during their experiences? To answer this question, we empirically probed the different goals people pursue when they take photos in an exploratory study. Moreover, we used an open-ended method in order to organically identify another photo-taking goal to use as a comparison to taking photos to share. Because the act of photo-taking can affect evaluations of an experience in and of itself (Diehl, Zauberman, and Barasch 2016), it was important to find a control condition that also involves photo-taking. This will allow us to hold the dynamics of taking photos constant and only manipulate what goal people have in mind for those photos, thus isolating the effect of having the intention to share during the experience.

Participants at a university lab (N = 166, 56.6% female, 18 to 69 years, mean age = 24.9) were asked to describe their primary goal when taking photos, and their open-ended responses were categorized by an independent coder who was blind to the research question. The coder was asked to create any number of categories and define them in any way that would best capture the data. Two separate coders (both different from the first coder) then received these category descriptions and classified each response into the
categories in whichever way they felt was most appropriate. The two coders exhibited high initial inter-rater reliability (average $\kappa = .82$) and resolved disagreements through subsequent discussion. An overwhelming majority of respondents (86.7%) reported that they took photos for one of two goals: to share with others (e.g., to post on social media, 27.7%) or to capture memories for themselves (59.0%). The remaining responses described other photo-taking goals, such as aesthetic expression (7.8%), professional responsibilities (1.2%), or personal hobbies (1.8%). A small proportion of people said that they never take photos (2.4%).

To further assess the prevalence of different objectives across a range of people’s photo-taking behavior, as well as to allow for the fact that some people might have more than one goal in mind when taking photographs, we asked a separate set of online respondents ($N = 100$, 51% female, 18 to 67 years, mean age = 36.4) to indicate the percentage of photos they took with each of the following pre-specified goals in mind: “For my own memory”, “To share with others”, “Another goal”, and “No particular goal” (with the total percentage adding up to 100% for each participant). Similar to the previous study, this constant-sum method also revealed that the majority of respondents’ photos (89.9%) were taken to share with others (32.2%) or for themselves (57.7%), with only a small proportion of the time being for another goal (4.5%). Moreover, few photos (5.6%) were reportedly taken without a goal in mind, suggesting that people usually have an explicit purpose for taking photos during an experience, rather than deciding what to do with their photos only after the fact.

Consistent with the pervasiveness of photo sharing, this descriptive evidence confirms that sharing photos is a common goal among consumers during the experience.
itself. Moreover, these exploratory studies point to another prevalent photo-taking goal: capturing memories for oneself. People value opportunities to preserve and protect their memories (Zauberman, Ratner, and Kim 2009; Baumgartner, Sujan, and Bettman 1992), and often take actions in the present to create memories they can draw on in the future (Elster and Loewenstein 1992; Keinan and Kivetz 2011). As such, photo-taking for oneself constitutes a natural comparison for photo-taking to share with others. Our subsequent studies will contrast a sharing goal with this other most commonly reported goal in taking photos.

**THE CURRENT RESEARCH**

First, to assess people’s beliefs about how these two primary photo-taking goals may affect enjoyment of an experience, we asked 200 online respondents (48% female, 18 to 65 years, mean age = 34.6 years) for their intuitions. When comparing the effects of these two goals on experiences, approximately 20% thought that taking photos to share with others would increase enjoyment compared to taking photos for themselves, while 18.5% held the opposite belief, that taking photos for themselves would increase their enjoyment of an experience compared to taking photos to share. The remaining 61.5% thought these photo-taking goals would not affect their enjoyment differentially. Clearly people do not share a single intuition as to whether or how photo-taking goals influence their evaluation of experiences.

Given these conflicting intuitions, our research systematically tests the effect of these photo-taking goals on consumers’ enjoyment. One possibility is that consumers with a sharing goal will anticipate greater post-experience benefits from the sharing
process (e.g., Lambert et al. 2013; Reis et al. 2010), and that this anticipation will increase enjoyment of the experience they are photographing. Similarly, because the experience of achieving one’s sharing goal is positive, it is possible that this positive affect might transfer to the actions associated with pursuing this goal (i.e., taking photos during the experience; Fishbach, Shah, and Kruglanski 2004). However, despite the utility people may gain from sharing their photos at a later point, we hypothesize that the process of taking photos to share with others may induce self-presentational concern and thus may decrease enjoyment of the experience itself.

In general, people are motivated to present themselves to others in a favorable light (e.g., Leary and Baumeister 2000; Goffman 1959; Jones and Pittman 1982; Jones and Wortman 1973). Social interactions inherently involve the prospect of being evaluated or judged by others in ways that can influence future outcomes (Schlenker and Leary 1982; Leary and Kowalski 1990). As a result, social situations often increase people’s concerns with self-presentation, or their desire to control the way they appear to real or imagined audiences (Tetlock and Manstead 1985; Schlenker 1980; Tedeschi 1981).

We suggest that taking photos with the goal of sharing them with others may lead people to consider how they will be perceived by their audience. As a result, the objective to share one’s photos may increase self-presentational concern. Though self-presentational concern may be particularly pronounced when people are in the photo themselves, even sharing pictures that do not include the self or that are not inherently social (e.g., photographing the mountain view during a solitary run) can trigger such concerns. Indeed, any type of photo can convey information about an individual that
others might evaluate, and one of the primary motives of self-presentation is to communicate desired identities to others (Leary and Kowalski 1990; Gollwitzer 1986). Consistent with this notion, people spend a lot of time curating their presence on social media, and frequently feel worried about managing their impressions in these contexts (Manago et al. 2008; Gonzales and Hancock 2011). Hence, we expect that when people take photos to share with others, they will experience greater self-presentational concern than when taking photos for themselves (i.e., to preserve their memories), which tends to be more private and less likely to evoke concerns of being evaluated by others.

How might self-presentational concern affect people’s evaluations of their experiences? We propose that effects on enjoyment could potentially occur through two different paths. First, self-presentational concern is a negative state and thus may decrease enjoyment of the experience directly. Indeed, concern about conveying a certain image of the self to others has been shown to conflict with the objective to maximize one’s own satisfaction (Mackie and Goethals 1987; Ariely and Levav 2000), and these concerns can be triggered in advance, well before people enter the social setting (Baumeister 1982; Schlenker and Leary 1982). Moreover, self-presentational concern is often associated with pressure to make a good impression, as well as with self-conscious emotions, such as anxiety (Leary 2007; Miller 1992; Hung and Mukhopadhyay 2012). Ultimately, these self-conscious emotions and self-awareness may directly reduce hedonic emotions, such as enjoyment (Diener 1979; Hung and Mukhopadhyay 2012).

Second, self-presentational concern could also affect enjoyment through the distal mechanism of engagement, or involvement, with the experience (Csikszentmihalyi 1997; Higgins 2006). Self-presentational concern that arises from considering how others will
view one’s photos may lead people to feel less immersed in the experience itself, which can reduce their enjoyment (Csikszentmihalyi 1997, Killingsworth and Gilbert 2010; Diehl, Zauberman, and Barasch 2016). Similarly, taking photos to share may shift people’s perspective from that of a participant to that of an observer (e.g., Jones and Nisbett 1972). Taking an observer’s perspective, rather than seeing oneself as an actor in the experience, may in turn cause people to become less engaged and to focus less on their internal or hedonic feelings of enjoyment (Storms 1973; Hung and Mukhopadhyay 2012).

Thus, we propose that taking photos to share, relative to taking photos for the self, will increase self-presentational concern, or anxiety, during the experience. This, in turn, will diminish enjoyment of the experience itself, either directly or by decreasing engagement in the experience.

H1: Relative to taking pictures for the self, taking pictures to share with others will reduce enjoyment of an experience.

H2: Reduced enjoyment from sharing goals will be driven by increased self-presentational concern during the experience.

H3: Self-presentational concern will diminish enjoyment either directly or by reducing engagement in the experience.

Note again that our theory of anticipated sharing applies to a broader range of behaviors beyond photo-taking. In fact, these effects should emerge in any situation in which a sharing goal is sufficiently activated during the experience itself. Photo-taking provides a suitable context to test our theorizing because it requires action during an experience, thus making the sharing goal salient throughout the event. Sharing in other
ways (e.g., blogging about one’s experience) does not necessarily require activity during the experience itself, and thus may not trigger the same level of self-presentational concern in the moment. Another feature also distinguishes photo-taking: it captures an experience in a concrete, visual form that accurately represents reality (and can only be edited up to a point without considerable time, effort, and expertise that few people have). In contrast, other forms of sharing (i.e., verbal or written) allow for easier editing or even fabrication at the time of communication, and may thus trigger less self-presentational concern during the experience.

*Study Overview*

Six studies test these predictions, demonstrating how photo-taking goals impact enjoyment of the experience itself and identifying the underlying role of self-presentational concern. In our studies we rely on people’s retrospective evaluation of their experiences (e.g., Raghunathan and Corfman 2006; Novemsky and Ratner 2003), either moments after the experience or after a short delay. Throughout these studies, we use a multi-method approach to show robustness across different types of situations – both externally-valid contexts where people spontaneously choose their own photo-taking goals, and internally-valid contexts where photo-taking goals are experimentally induced.

In the first two studies, we test our hypotheses in the field by examining participants’ actual experiences. Study 1 documents the basic effect with correlational data, showing in natural settings that individuals who take photos to share enjoy their experiences less than individuals who take photos for themselves. Building on this correlational study, Study 2 demonstrates this effect with participants’ real holiday experiences, but does so by experimentally inducing people to take photos with one of
the two primary goals in mind. In these field studies, we demonstrate that photo-taking goals matter in rich contexts where individuals are taking part in self-selected experiences.

In the remaining studies, we manipulate photo-taking goals in a unique laboratory paradigm that simulates real-life experiences in a controlled setting. This lab paradigm allows us to achieve greater control over the photo-taking environment so that we can more precisely isolate the effect of photo-taking goals on enjoyment during the experience itself, as well as the psychological mechanism driving the effect.

Studies 3 and 4 explore the role of how salient the photo-taking goal, and thus self-presentational concern, is during the experience. In Study 3, we examine situations where people have both the self and share goals in mind, and manipulate the extent to which each goal is activated at the time of photo-taking. In Study 4, we investigate the interaction of photo-taking goals with trait self-consciousness, an individual difference measure that captures the extent to which self-presentational concern is chronically salient.

In the final two studies, we examine the role of the sharing target audience and gain further insight into the psychological mechanism. In Study 5, we demonstrate the effect of sharing on enjoyment of the experience when people actually share their photos with a partner who separately went through the same experience. In Study 6, we manipulate audience closeness and show that when people share with close friends (versus acquaintances), they experience less self-presentational concern and thus more enjoyment. In both Studies 5 and 6, we also find evidence for the distal mechanism by
which self-presentational concern mediates the effect of photo-taking goals on enjoyment: through its effect on engagement.

**STUDY 1: PHOTO-TAKING AT A TOURIST ATTRACTION**

In order to examine the association between photo-taking goals and enjoyment in a situation where participants were not relying on recollections of past experiences, in this study we surveyed tourists while they were visiting a popular landmark in a major metropolitan city. This landmark is a statue of a famous individual in front of a museum, and it is one of the top-rated tourist attractions in this city. During normal visiting hours, there is typically a line of people waiting for their chance to take a photo with the statue. We recruited participants from this line to take our survey. That is, we only surveyed individuals who were definitely planning to take a photo with the statue (not individuals who were just observing the statue from afar). We conjectured that these individuals already had a salient goal for their photos in mind before we approached them.

*Methods*

Two research assistants collected data for this study across four days (for a total of twelve hours). The Ras were instructed to approach individuals who were about to take a photo of the focal statue, and to ask them if they would be willing to take a short survey about their experience in exchange for a souvenir candy bar (decorated with famous city sights). For groups, Ras were told to ask only the person who was “in charge” of the camera. Note that respondents themselves may or may not have been in the photos they took. As discussed earlier, the effect of photo-taking goals should hold for either type of photo, and if anything, this selection serves as a conservative test.
Across the four days, one-hundred fifty-three individuals (47.1% female; mean age = 31.8) completed the survey. Among these participants, 20.9% were from outside the U.S. and 19.0% reported that English was not their first language.

To assess which photo-taking goal participants had in mind at the moment of taking the photo, they were asked to select their primary goal from a multiple-choice list including “I took the photo for myself (personal memories)”, “I took the photo to share (with other people)”, “I took the photo with a different goal in mind (neither for myself or to share)” and “I took the photo without any particular goal in mind”.

Participants were also asked “How much did you enjoy the experience here at the [xxx] statue?” on a 7-point Likert scale ranging from 1 = “Not at all” to 15 = “Extremely.” In addition, as another indicator of how much individuals enjoyed their experience, we asked them “To what extent would you recommend visiting the [xxx] statue to a friend?” from 1 = “Not at all” to 15 = “Extremely”. Finally, we asked participants to report how many photos they had taken at the statue during their visit that day.

To test the robustness of the effect, we counterbalanced the order of that question and the actual photo-taking. Half the participants were asked about their photo-taking goal right before they took their photo(s). Then, after taking their photo, they were asked the questions about enjoyment, recommendation, and demographics. The other half of participants were asked all questions right after they had taken their photo(s). To avoid any effects of assessing photo-taking goals before asking about enjoyment, the order of questions for these participants was as follows: enjoyment and recommendation items, photo-taking goal question, and then demographics. Question order did not have any
significant effect on the results, but was included as a factor in the regression models for completeness.

**Results**

Consistent with the descriptive reporting of goals in the Introduction, a majority of respondents (96.0%) reported that they were taking photos at the statue for one of two goals: to capture memories for themselves (35.3%) or to share with others (52.3%), or a combination of both these goals (8.5%). Only a small proportion of people reported that they were taking photos for another goal (2.0%) or with no particular goal in mind (2.0%). In order to examine the effects of our two primary goals more cleanly, in this study we will focus on individuals who reported pursuing only the self goal or only the share goal at the tourist attraction (n = 134). We will examine the issue of pursuing multiple goals in Study 3, and further discuss the issue in the General Discussion.

To test our hypothesis that sharing goals decrease enjoyment, we estimated a regression with enjoyment as the dependent variable and photo-taking goal (*Self-goal* = 0; *Share-goal* = 1), question order (goal asked before taking photo = 0; goal asked after taking photos = 1), and their interaction as the independent variables. Consistent with our predictions, we found an effect of photo-taking goal (B = -1.539, SE = .575, t(130) = -2.68, p < .01), such that taking photos to share reduced enjoyment relative to taking photos for the self. There was no main effect of question order (B = -.231, SE = .665, t(130) = -.35, p = .73), nor was there a photo-taking goal by question order interaction (B = .984, SE = .857, t(130) = 1.15, p = .25).

Similar results emerged for a regression that had recommendation as the dependent variable. We found a marginally significant effect of photo-taking goal (B = -
1.211, $SE = .618$, $t(130) = -1.96$, $p = .052$), such that taking photos to share made people less likely to report that they would recommend the experience to a friend. There was no main effect of question order ($B = -.456$, $SE = .714$, $t(130) = -.64$, $p = .52$), nor was there a photo-taking goal by question order interaction ($B = .935$, $SE = .920$, $t(130) = 1.02$, $p = .31$).

There was also a significant effect of photo-taking goals on the number of photos people took ($B = 3.842$, $SE = 1.930$, $t(127) = 1.99$, $p = .049$).\(^1\) Individuals who were taking photos to share took more photos ($M = 8.87$, $SD = 9.81$) than individual who were taking photos for themselves ($M = 5.40$, $SD = 4.54$). There was no main effect of question order ($B = -3.081$, $SE = 2.215$, $t(127) = -1.39$, $p = .17$), nor was there a photo-taking goal by question order interaction ($B = -.415$, $SE = 2.861$, $t(127) = -1.15$, $p = .89$).

Note that for this and all other studies reported in the paper, the effect of photo-taking goals on enjoyment holds when number of photos taken is included in the model.

**Discussion**

Study 1 provides initial evidence that when individuals take photos to share, they enjoy the experience less than when they take photos for themselves. Moreover, the results suggest that this reduction in enjoyment from sharing goals may also result in people being less likely to recommend that experience to others.

Results from this first study provide support for our hypothesis in a situation where consumers have freely chosen their own photo-taking goals. This is important for establishing the phenomenon in real-life settings with high ecological validity. However, because this study is correlational in nature, we obviously cannot make strong claims that

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\(^1\)Only 131 out of 134 participants responded to this question.
the photo-taking goals themselves caused these differences in enjoyment. In particular, we cannot rule out that the causal effect goes in the other direction (people choose different photo-taking goals depending on how much they are enjoying the experience), or that certain types of individuals are more likely to take photos with certain goals in mind, and that these individuals are more or less likely to enjoy their experiences due to some other characteristic. Thus, in the remaining studies, we will build on this correlational evidence with experimental studies that manipulate people’s photo-taking goals directly. We will first do this with people’s real-life holiday experiences, and then in simulated experiences in the laboratory that afford us more control and the ability to explore the self-presentational process in greater detail.

**STUDY 2: EXPERIMENTALLY EXAMINING THE EFFECT OF PHOTO GOALS IN THE FIELD**

The next study tests our hypothesis in the field with people’s real holiday experiences. We recruited participants for a study involving photo-taking, randomly assigned them to take photos for a self goal (for personal memories) or a share goal (to post on social media), and then examined how those goals influenced their evaluation of their holiday experience.

To gain initial insight into the mechanism, we assess two indicators of self-presentational concern: memory perspective and the content of people’s photos. First, we build on prior work (Nigro and Neisser, 1983; Libby and Eibach 2011) showing that when people remember an experience, they tend to visualize it either from an “actor” perspective (i.e., from their original, first-person point-of-view) or from an “observer”
perspective (i.e., from a third-person point-of-view, as an outside observer might have seen the scene). Importantly, third-person memories are more common when an event causes self-awareness, or in situations where individuals are conscious of being observed or evaluated (Nigro and Neisser 1983). Third-person memories have also been associated with greater intensity of self-conscious emotions, such as anxiety (Hung and Mukhopadhyay 2012). Thus, we predict that when individuals take photos with the explicit goal of sharing them with others, as opposed to keeping them for personal memories, they will be more inclined to adopt the perspective of an observer, and thus more likely to remember their experience from a third-person perspective.

Second, to gain additional indirect evidence of the self-presentational process, we also examine the content of people’s photos as a function of photo-taking goal. We had two sets of predictions about the types of photos people would include in their albums for a self goal versus a share goal. The first set of hypotheses was about the people in the photos. Given self-presentational motives, creating an album for social media might spur people to include photos that present the people in them (including themselves) in the best possible light. Thus, we predict that individuals who are creating albums to share will include more photos of themselves, more posed photos (as opposed to candid ones), and more photos of people smiling. The second hypothesis was about the types of objects in the photos. Photos to share with others may need to stand alone and tell viewers a complete story, including the occasion and context, whereas this information is known to the photo-taker when creating personal albums. Thus, we predict that individuals who are creating albums to share will include more photos that are typical or representative of the event, in this case, Christmas (e.g., Christmas trees, stockings, reindeer).
Methods

Four hundred forty students at a Northeastern university signed-up to participate in a study about their Christmas holiday experience. The recruitment announcement was posted for several weeks before the holiday break began on the behavioral lab website. The only requirements to sign-up for the study were that participants had to be celebrating Christmas and be willing to take photos of their Christmas experience. No other information was provided to participants during the sign-up phase of the study.

Participants were randomly assigned to one of two Photo-taking Goal conditions (Self-Goal, Share-Goal) in a between-subjects design. Two days before Christmas, on December 23rd, participants received an email with a link to a survey that contained detailed instructions for their assigned photo-taking goal. All participants were asked to take at least 10 photos during their holiday experience. In the Self-Goal condition, they were told to take photos so that they could make an album to keep for themselves, to look back on and remember the day. In the Share-Goal condition, they were told to take photos so that they could make an album that they could share on Facebook or other social media. All participants were asked to confirm that they read their special photo-taking instructions, and that they would take photos for the goal that they had been assigned. Then, they confirmed that they would be willing to complete a follow-up survey after their Christmas holiday and upload all of their photos at that time. Of the original 440 participants who signed up for the study, 332 completed this pre-holiday survey, with no significant differences in response rate between conditions (Self-Goal: 74%, Share-Goal: 77%, \( \chi^2 = .44, p = .51 \)).
On Christmas Eve (December 24th), all participants who had completed the pre-holiday survey were sent one reminder email with their assigned photo-taking goal instructions in the body of the email (no survey link). No emails were sent on Christmas Day.

**Post-holiday Survey.** Finally, two days after Christmas, on December 27th, all participants were sent an email with a post-holiday survey. Of the 332 participants who successfully completed the pre-Christmas survey, 227 people (75% female; mean age = 22.0) completed the full post-holiday survey, with no significant differences in response rate between conditions ($Self-Goal: 66\%, Share-Goal: 71\%, \chi^2 = 1.10, p = .29$).

In the survey, participants were first asked to think back to their Christmas experience using an established procedure (Pronin and Ross 2006). They were asked to take a moment to shut their eyes and form a clear picture of the Christmas situation in their mind, including the times when they took photos. After visualizing their Christmas experience for a minute, participants were asked “How much did you enjoy your Christmas experience as a whole” on a 7-point Likert scale ranging from 1 = “Not at all” to 7 = “Extremely.”

Then, participants responded to a memory perspective measure, which served as an indirect measure of the self-presentation process (Pronin and Ross 2006). They were asked to rate that image in their head on a 7-point Likert scale ranging from mostly a first-person (actor) perspective to mostly a third-person (observer) perspective. See Appendix B for how the endpoints were described.
Finally, participants responded to a few demographic questions and reported how many photos they took during Christmas. Unlike Study 1, there were no differences in the reported number of photos taken across the two photo-taking goal conditions (M_{Self-Goal} = 28.25, SD_{Self-Goal} = 42.27, Min_{Self-Goal} = 2, Max_{Self-Goal} = 300; M_{Share-Goal} = 29.16, SD_{Share-Goal} = 52.05, Min_{Share-Goal} = 1, Max_{Share-Goal} = 500; F(1,225) = .02, p = .89). The percentage of people who did not follow the instructions to take at least 10 photos during the holiday did not differ by condition (Self-Goal: 7.5%, Share-Goal: 10.8%, χ² = .76, p = .38). We analyze our results for all participants who completed all phases of the study, but the results hold when we restrict the sample to participants who took at least 10 photos.

**Photo Upload and Content Analysis.** At the very end of the survey, participants were asked to upload ten photos into a Christmas album to fulfill their assigned photo-taking goal. Participants were again reminded of their photo goal before creating the album: in the Self-Goal condition, they were instructed to make a personal album that they could keep for themselves to look back on and remember the day, while in the Share-Goal condition, they were instructed to make a shared album that they could post on Facebook or other social media (see full instruction wording in Appendix B). Of the 227 people who completed the full post-holiday survey, 222 people successfully uploaded albums at this stage.

To test our predictions about the content of photos, we had four separate research assistants, who were blind to the research question and condition, code photos on each of

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2There are no significant differences between conditions for number of photos taken in all remaining studies, so results for this measures are reported in Appendix A.
the following characteristics: posed, smiling, and Christmas content (see exact wordings from the coding guide in the Appendix C). Each research assistant coded one-half of the total albums, such that two research assistants coded the first half of the photos and two different research assistants coded the second half of the photos (approximately 1,050 each). Each pair of coders exhibited high initial inter-rater reliability and resolved disagreements through subsequent discussion (each $\kappa > .8$). Because coders could not clearly identify how many photos in each album included participants themselves, we asked participants to report this information after uploading their album of 10 photos.\(^3\)

**Results**

**Enjoyment.** Consistent with our predictions, participants who took photos to share enjoyed their Christmas experience less ($M = 5.15$, $SD = 1.34$) than those who took photos for a personal album ($M = 5.58$, $SD = 1.23$; $F(1,225) = 6.29$, $p = .01$, $\omega_p^2 = .023$).

**Memory Perspective.** When asked to recall their Christmas experience, participants in the *Share-Goal* condition were more likely to rate their memory as being from a third-person perspective ($M = 3.55$, $SD = 1.78$) than those in the *Self-Goal* condition ($M = 2.92$, $SD = 1.91$, $F(1,225) = 6.72$, $p = .01$, $\omega_p^2 = .025$).

**Photo content.** A majority of people ($n = 200, 90.1\%$) uploaded the requested 10 photos into their albums, and the average number of photos in an album did not differ by condition ($M = 9.60$, $SD = 1.33$; $F(1,220) = .24$, $p = .62$). Still, because the number of photos in each album was not identical across participants, we calculated the proportion

\(^3\)The subset of participants who responded to this question about whether the self was in the photo is slightly different than the subset of participants who uploaded photo albums that were subsequently coded. That is, 2 participants who answered this question did not end up uploading an album, and 2 participants who uploaded an album did not answer this question. We report all data collected for each measure.
of total photos in each person’s album that contained each content of interest (self photos, posed photos, smiling photos, Christmas photos).

First, while there were no differences in the proportion of photos with people in them (self: M = 58%, SD = 32%; share: M = 60%, SD = 29%; F(1,220) = .24, p = .62), participants who created albums to share did include a greater proportion of photos of themselves (M = 31%, SD = 28%) than those who created personal albums (M = 15%, SD = 21%; F(1,220) = 22.15, p < .001, ℓ2 = .087). Further, as predicted, participants who created albums to share with others included a greater proportion of posed photos (M = 43%, SD = 31%) than those who created albums to keep for themselves (M = 25%, SD = 26%; F(1,220) = 23.90, p < .001, ℓ2 = .094). In addition, participants who created albums to share included a greater proportion of photos with people smiling (M = 40%, SD = 30%) than those who created albums for themselves (M = 20%, SD = 22%; F(1,220) = 32.27, p < .001, ℓ2 = .123). Finally, participants who created albums to share included a greater proportion of photos with items typical of Christmas (M = 58%, SD = 30%) than those who created personal albums (M = 50%, SD = 28%; F(1,220) = 4.66, p = .03, ℓ2 = .016).

Discussion

The present field study provides experimental evidence from people’s own, real-life experiences that taking photos to share with others can decrease enjoyment relative to taking photos for the self. We demonstrate this effect in the field with individuals’ real Christmas experiences, a holiday where people naturally take a lot of photos; as such, our findings speak to many meaningful experiences in consumers’ lives.
Moreover, we provide initial evidence of the hypothesized self-presentational mechanism, showing that when people take photos to share, they remember their experience more from a third-person perspective. This suggests that taking photos to share makes people consider how the event (and the photos) would be evaluated by an observer, a result of self-presentational concern triggered by the sharing goal.

Relatedly, we also show that people include different types of photos in a shared album compared to a personal album. Consistent with the self-presentational mechanism we propose, when people create an album to share on social media, they are more likely to choose photos of themselves and photos where the people are posed (as opposed to candid) and smiling, suggesting that they want to present themselves in a positive light to their audience. In addition, with shared albums, people are more likely to include photos that have items that are typical of the holiday, thus providing details about the occasion and context for those who were not there.

THE LABORATORY PARADIGM

In the studies reported above, we examined the effect of photo-taking goals on people’s experiences in the field, both correlationally and experimentally. While this allows us to test the consequences of these goals on actual behavior in a natural context, it does not afford us full control over the photo-taking environment to isolate the mechanism. For instance, having different goals might influence what people choose to experience or which aspect to document (as we saw in the photo content), contributing to the observed differences. Accordingly, in the remaining studies, we test our hypotheses in a controlled laboratory setting. Doing so permits us to hold the experience constant across
conditions so we can identify the effect of photo-taking goals beyond any effects on the selection of experiences.

Across our laboratory studies, participants are told that they will watch a video depicting a first-hand travel experience (e.g., a city bus tour), and that they should try to imagine that they are actually there at the event experiencing it themselves, not just watching it on the screen. Participants are able to take pictures during the depicted experience, just like they would during an actual experience, by clicking their mouse on the “camera” button. The photos show up below the video, similar to how photos are displayed on a digital camera or camera phone. The computer program records how many photos were taken during the experience. For a screenshot demonstrating the laboratory photo-taking experience, see Figure 1.

Similar to the field study, across our laboratory studies, the only difference between the photo-taking goal conditions is whether they were assigned to take photos for themselves or to share with others. For example, in an initial test of the laboratory paradigm, participants in the Self-Goal condition were told: “When taking photos, please imagine that you are planning to make an album to look at and keep for yourself. Your goal is to take pictures so that you can preserve the experience for yourself.” In the Share-Goal condition, they were told: “When taking photos, please imagine that you are planning to make an album to share with others on social media (e.g., Facebook). Your goal is to take pictures so you can share the experience with others, if you would like to do so.”

In this initial study (n = 131), participants experienced a 4-minute London city bus tour from the first-person perspective of someone actually going on the tour. The
video was taken from the top of a typical double-decker bus with a tour guide giving riders an overview of the main city attractions. Immediately following the bus tour, participants were asked “How much did you enjoy the bus tour experience?” on a 7-point Likert scale ranging from 1 = “Not at all” to 7 = “Extremely.” We found that participants who took photos with the goal of sharing the experience with others enjoyed the experience less ($M = 4.70; SD = 1.65$) than those who took photos for themselves ($M = 5.31; SD = 1.31; F(1,129) = 5.51, p = .02, \omega_p^2 = .033$). These results replicate our effects from the field in a more controlled laboratory setting, where the underlying experience and what can be photographed are held constant. This lends credence to the lab paradigm’s ability to capture the basic effect we observe in the field. In the following studies, we build on this finding and utilize this laboratory paradigm to further test the proposed psychological mechanism of self-presentational concern.

**STUDY 3: DIFFERENTIAL GOAL SALIENCE WHEN BOTH GOALS ARE ACTIVE**

Study 3 further clarifies the nature of the photo-taking goal construct. In particular, we examine what happens when people have both self and share goals in mind at the same time, but one goal is more salient than the other. This approach allows us to distinguish whether it is the mere presence or the salience of photo-taking goals that affects enjoyment.

While people may have both self and share goals in mind when taking pictures, we argue that it is the relative salience of the two goals during the experience that matters, not merely their presence. In particular, the effect of photo-taking goals on
enjoyment should depend on which goal is the “primary” goal, or the goal that is most activated during that experience. In other words, when one goal is more salient during the experience than the other, that goal will have greater influence on enjoyment of the experience. As such, if sharing photos with others is more salient during the experience than keeping photos for oneself, we expect self-presentational concern to be heightened. If, however, keeping the photos for oneself is more salient than sharing the photos with others, then self-presentational concern should play less of a role. Thus, it is not necessary for the goals to be mutually exclusive, or for other goals to be fully absent from one’s mind, for a photo-taking goal to have an effect on an individual’s experience. The key is the relative salience of the different goals.

In order to test this prediction, all conditions in this study explicitly mention both goals. That is, all participants were told that they should take photos during the experience for their personal memory and to share with others. Yet, in two conditions, participants were instructed to take photos with one of these goals as their primary goal. In other words, in these two conditions, one of those goals was more strongly activated during that experience. We provide manipulation checks to assure that both goals were indeed activated at the same time but differentially so. In addition, because some people report that they take photos with both of these goals equally salient, we introduce a third condition where participants were instructed to take photos with both goals in mind during the experience but with neither of them the primary goal. For this third condition, we expect self-presentational concern and enjoyment of the experience to fall somewhere in between the other two conditions.
In this study, we also explore the proposed mechanism by directly measuring individuals' self-reported levels of self-presentational concern during the experience.

**Methods**

Two-hundred seven individuals (66.7% female; mean age = 23.1) at a Northeastern university participated in a study in exchange for payment. In this study, participants experienced a 3-minute African safari adventure depicting a pack of warthogs who were feeding on an antelope.

Participants were randomly assigned to one of three experimental conditions (*Primarily-Self-Goal, Primarily-Share-Goal, Equal-Goals*). In all conditions, participants were told “Two main reasons why people take photos are so that they can look back at the photos themselves and so that they can share the photos with others. As you go through the experience, please take photos with both of these goals in mind.” So in all conditions, it was explicit that the photos they took could serve either of these two goals. The only difference between the three photo-taking conditions was which of these two goals they were instructed to have most salient during the experience. In the *Primarily-Self-Goal* condition, participants then read: “However, your PRIMARY goal should be to take photos so you can look back at those photos and remember the experience in the future.” In the *Primarily-Share-Goal* condition, participants read: “However, your PRIMARY goal should be to take photos so you can share those photos with other people.” For this condition, the two goals were mentioned in reverse order in the introductory sentence that stated the “two main reasons” why people take photos (share goal first). In the *Equal-Goals* condition, participants read: “Your goal should be to take pictures so that you can look back at those photos to remember the experience in the
future and also so that you can share those photos with other people.” The order in which the two goals were mentioned in the Equal-Goals condition was counterbalanced, but since it did not affect any of the dependent measures, we collapse across order in subsequent analyses.

Immediately following the safari, participants responded to one item assessing their overall evaluation of their experience: “How much did you enjoy the safari experience?” on a 7-point Likert scale ranging from 1 = “Not at all” to 7 = “Extremely.”

We also collected responses on an additional item to measure a behavioral implication of participants’ enjoyment: “To what extent would you be interested in participating in a similar future experiment?” (1 = “Not at all interested” to 7 = “Extremely interested”; Raghunathan and Corfman 2006).

Participants were also asked three items measuring their self-presentational concern. Because self-presentational concern often triggers the self-conscious emotion of anxiety (e.g., Leary 2007; Miller 1992, Hung and Mukhopadhyay 2012), we assess participants’ feelings of anxiety during the experience to examine the self-presentational process with the item “How anxious did you feel during the bus tour experience?” on a 7-point Likert scale from 1 = “Not at all anxious” to 7 = “Extremely anxious”. In addition, participants responded to two additional items that asked about the self-presentational process even more directly: “How worried were you that you were taking photos that would show yourself in the best possible light?” and “To what extent were you attempting to control your impression while taking photos?”, both on 7-point Likert scales from 1 = “Not at all” to 7 = “Extremely”. These three items loaded together in a factor analysis, so we combined them to form a measure of Self-presentational Concern.
(α = .67). All effects hold when we separately analyze each of the items making up our Self-presentational Concern scale.

As a manipulation check of the goal salience manipulation, we included two items at the end of the study to capture relative goal activation during the experience: “To what extent were you focused on capturing photos for yourself to look back on in the future while experiencing the safari?” and “To what extent were you focused on capturing photos to share with others while experiencing the safari?”, both on 0-100 Likert scales from 0 = “Not at all” to 100 = “A great deal”.

Results

Goal Salience Manipulation Check. Consistent with the intended manipulation, a one-way ANOVA revealed a significant effect of photo-taking condition on the two goal salience manipulation checks (self: $F(2,204) = 9.67, p < .001, \omega_p^2 = .077$; share: $F(2,204) = 15.92, p < .001, \omega_p^2 = .126$).

Participants in the Primarily-Self-Goal condition reported that they were capturing photos for themselves to look back on in the future ($M = 70.97; SD = 21.95$) more than those in the Primarily-Share-Goal condition ($M = 51.09; SD = 29.23; t(138) = 4.38, p < .001, \omega_p^2 = .116$) and marginally more than participants in the Equal-Goals condition ($M = 62.71; SD = 28.61; t(137) = 1.81, p = .07, \omega_p^2 = .016$). In addition, those

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*We also collected three ancillary measures to test the potential alternative explanation that taking photos to share is more distracting than taking photos for the self (”How distracted did you feel by your photo-taking goal(s) during the safari experience?”, “How much did you feel like you were missing out on the safari experience while taking photos?”, “Taking photos for that goal(s) really disrupted my safari experience.”; α = .87, averaged to form a measure of distraction). There were no differences between the three Photo-Goal conditions in distraction ($F(2,204) = .54, p = .59$), and the effect of photo-taking goals on enjoyment holds when distraction is included in the model.*
in the Equal-Goals condition reported that they were taking photos for this reason more than those in the Primarily-Share-Goal condition ($t(136) = 2.54, p = .01, \omega_p^2 = .038$).

On the other hand, participants in the Primarily-Share-Goal condition reported that they were capturing photos to share with others ($M = 78.78; SD = 21.49$) more than those in the Primarily-Self-Goal condition ($M = 55.33; SD = 26.72; t(138) = 5.64, p < .001, \omega_p^2 = .181$) and more than participants in the Equal-Goals condition ($M = 67.26; SD = 24.99; t(136) = 2.75, p < .01, \omega_p^2 = .049$). In addition, those in the Equal-Goals condition reported that they were taking photos for this reason more than those in the Primarily-Self-Goal condition ($t(137) = 2.86, p < .01, \omega_p^2 = .046$).

**Enjoyment.** Consistent with our main prediction, an ANOVA revealed a significant effect of photo-taking condition on enjoyment ($F(2,204) = 3.68, p = .03, \omega_p^2 = .025$). Replicating the previous studies, participants who took photos during the safari with the primary goal of sharing the experience with others enjoyed the experience less ($M = 4.19; SD = 1.70$) than those who took photos with the primary goal of preserving the experience for themselves ($M = 4.99; SD = 1.57; t(138) = 2.71, p < .01, \omega_p^2 = .044$). Participants who took photos with both of these goals equally salient fell between the two primary goal conditions: they enjoyed their experience just as much ($M = 4.62; SD = 1.92$) as those who took photos primarily for themselves ($t(137) = 1.25, p = .21$) and those who took photos primarily to share with others ($t(136) = 1.45, p = .15$).

**Interest in similar experience.** An ANOVA revealed a marginally significant effect of photo-taking condition on interest in participating in a similar experience ($F(2,204) = 2.34, p = .099, \omega_p^2 = .013$). Participants who took photos during the safari with the primary goal of sharing the experience with others reported that they would be
less likely to participate in a similar future experiment \((M = 4.12; SD = 1.75)\) than those who took photos with the primary goal of preserving the experience for themselves \((M = 4.73; SD = 1.62; t(138) = 2.13, p = .04, \omega_p^2 = .025)\). Participants who took photos with both of these goals equally salient fell between the two primary goal conditions: they were just as likely to go through a similar experience \((M = 4.32; SD = 1.71)\) as those who took photos primarily for themselves \((t(137) = 1.40, p = .17)\) and those who took photos primarily to share with others \((t(136) = .72, p = .48)\).

**Self-presentational Concern.** An ANOVA also revealed a significant effect of photo-taking condition on self-presentational concern \((F(2,204) = 4.39, p = .01, \omega_p^2 = .032)\). Participants who took photos with the primary goal of sharing the experience with others felt more self-presentational concern \((M = 3.97; SD = 1.29)\) than those who took photos with the primary goal of preserving the experience for themselves \((M = 3.30; SD = 1.21; t(138) = 2.96, p < .01, \omega_p^2 = .053)\). Participants who took photos with both of these goals equally in mind fell in between primary goal conditions: they felt as much self-presentational concern \((M = 3.62; SD = 1.47)\) as those who took photos primarily for themselves \((t(137) = 1.41, p = .16)\) and those who took photos primarily to share with others \((t(136) = 1.53, p = .13)\).

**Mediation analyses.** We conducted a mediation analysis using the bootstrap procedure with 10,000 samples (Preacher, Rucker, and Hayes 2007) to test the process by which photo-taking goals affects enjoyment. We find a significant indirect effect of self-presentational concern \((\text{Indirect effect} = -.418, \text{SE} = .151, 95\% \text{ CI} = [-.756, -.160])\), such that taking photos to share increased self-presentational concern \((a = .67, p < .01)\), and as self-presentational concern increased, enjoyment decreased \((b = -0.67, p < .001)\). Once
we included self-presentational concern in our model, the effect of photo goals on enjoyment significantly decreased from $c = -0.80, p < .01$ to $c' = -0.38, p = .14$, suggesting full mediation.

Discussion

This study supports the proposition that when a share goal is salient, even when it is accompanied by another (less salient) self goal, there can be negative effects on enjoyment. That is, having primarily a sharing goal in mind reduces enjoyment relative to having primarily a self goal in mind, replicating our effects even when it is explicit that both goals are possible. In addition, as expected, when both goals are equally salient, enjoyment of the experience falls in between the two primary goals. This pattern of results is also present for a behavioral measure: likelihood to participate in another related experience. Thus, taking photos to share does not just reduce enjoyment of the experience itself; it can also extend to future behavioral intentions.

STUDY 4: MODERATION BY TRAIT SELF-CONSCIOUSNESS

Study 3 provided evidence that the reduced enjoyment experienced by individuals taking photos to share depends on how salient that goal is relative to other goals. Study 4 seeks to demonstrate the importance of salience further by examining how the salience of self-presentational concern itself, as measured by a relevant individual difference variable, interacts with photo-taking goals. The Trait Self-Consciousness Scale (Fenigstein, Scheier, and Buss 1975; Scheier and Carver 1985) is a questionnaire which measures individual differences in the extent to which individuals are concerned with presentation of the self and the reactions of others to that presentation. We examine two
sub-scales relevant to our context: the *Public Self-Consciousness* scale, which measures an individual’s tendency to think about self-aspects that are matters of public display, and the *Social Anxiety* scale, which measures an individual’s sense of apprehension over being evaluated by others in one’s social context. People who are high in these aspects of self-consciousness have a high awareness of how others regard them and frequently feel as though others are evaluating them (Fenigstein 1979). We expect that the effect of reduced enjoyment when individuals take photos to share will be the strongest for those who are high on these dimensions of self-consciousness.

*Methods*

Two-hundred twenty-four individuals (50.4% female; mean age = 35.5) participated in an online study via Amazon.com’s Mechanical Turk in exchange for payment. The recruitment announcement specified that participants should be over 18 years of age and U.S. residents.

Participants were randomly assigned to a *Self-Goal* or *Share-Goal* condition in a between-subjects design. Participants received the same photo-taking goal instructions as in the pilot lab study and then watched a first-person video of a walking tour through Carcassonne, France that took 3 minutes and 22 seconds.

After the walking tour video ended, all participants responded to the same enjoyment question from the previous studies. Then, participants were asked to indicate the extent to which 13 items from two relevant sub-scales of the Trait Self-Consciousness Scale were like them, using the following response format: 0 = “Not like me at all”, 1 = “A little like me”, 2 = “Somewhat like me”, and 3 = “A lot like me”. The Public Self-Consciousness sub-scale includes items such as “I care a lot about how I present myself”.
to others”, while the Social Anxiety sub-scale includes items such as “I feel nervous when I speak in front of a group” (see Appendix D for full list of scale items). Responses were summed across all 13 items to form our individual difference measure of Trait Self-Consciousness (α = .78). The measure could, in theory, range from 0 (i.e., not at all self-conscious) to 39 (i.e., extremely self-conscious). In our sample, responses ranged from 7 to 36 with $M = 20.91$ and $SD = 6.70$. This measure was not affected by the photo-goal manipulation ($F(1,222) = .39, p = .53$).

Results

Enjoyment. To test our hypothesis that those who score higher in trait self-consciousness will be more likely to experience reduced enjoyment in the sharing condition, we estimated a regression with enjoyment as the dependent variable and Photo-taking Goal (Self-Goal = 0; Share-Goal = 1), Trait Self-Consciousness (mean-centered), and their interaction as the independent variables.

In estimating the regression, we found a significant effect of photo-goal condition ($B = -.501, SE = .170, t(220) = -2.96, p < .01$), replicating our findings from the previous studies that participants enjoyed the experience less in the Share-Goal condition than the Self-Goal condition. There was no significant effect of self-consciousness ($B = .016, SE = .018, t(220) = .87, p = .39$). Most importantly, however, consistent with our predictions, we found a significant photo-goal condition by self-consciousness interaction ($B = -.066, SE = .025, t(220) = -2.58, p = .01$).

To decompose this interaction, we first examined the relationship between scores on the trait self-consciousness scale and enjoyment for each photo-taking goal condition (Aiken and West 1991; Spiller et al. 2013). For the Self-Goal condition, when self-
presentational concern should not be as much of a factor, there was no significant relationship between self-consciousness and enjoyment ($B = .016, SE = .018, t(220) = .87, p = .39$). However, for the *Share-Goal* condition, when self-presentational concern could play a role, there was a significant negative association between self-consciousness and enjoyment ($B = -.050, SE = .018, t(220) = -2.82, p < .01$). In other words, the higher participants scored on trait self-consciousness, the less they enjoyed the experience, but only when they were taking photos to share.

In order to identify the range of self-consciousness scores for which the simple effect of the photo-goal manipulation was significant, we used the Johnson-Neyman technique. This analysis revealed that there was a significant effect of photo-taking goal for any self-consciousness score greater than 18.6 ($B_{JN} = -.353, SE = .179, p = .05$), but not for any self-consciousness score less than 18.6. Figure 2 displays the effect of both photo-taking goals on enjoyment for the entire range of the Trait Self-Consciousness Scale.

**Discussion**

This study replicates our previous findings showing that taking photos to share diminishes enjoyment relative to taking photos for the self. In addition, we find that individual differences in self-consciousness affect people’s enjoyment depending on their photo-taking goal. For those who take photos for themselves, self-consciousness is not related to enjoyment. However, for those who take photos to share with others, being higher in self-consciousness is related to lower enjoyment during the experience, arguably because those individuals who have a more chronically salient concern about self-presentation are the ones whose anxiety most prevents them from enjoying the
experience. This provides further support for the proposed self-presentational mechanism.

Study 4 showed that individual differences in the salience of self-presentational concern can moderate the effect of photo-taking goals; in an ancillary study (n = 590; 58.6% female; mean age = 25.8), we also altered the situational salience of self-presentational concern and thus experimentally moderated the effect of photo-taking goals on enjoyment. To do so, we manipulated a feature of the photo-taking environment: half the participants were given the opportunity to “delete” photos from their camera during the experience, which was made highly salient to them. By highlighting this aspect of the photo-taking interface, we made it clear during the bus tour experience that these participants had the ability to select which photos to keep. We predicted that the share-goal condition would take advantage of this feature more than the self-goal condition, and that it would reduce their self-presentational concern and attenuate the negative effect on enjoyment.

Interestingly, while there were no differences in the total number of photos initially taken across photo goal conditions (F(1,586) = .07, p = .79), we found a significant effect of photo-taking goal on the number of photos deleted (F(1,269) = 10.86, p < .01). Participants in the Share-Goal condition deleted more photos (M = 4.36, SD = 4.44) than participants in the Self-Goal condition (M = 2.74, SD = 3.61). This suggests that people want to choose their photos more carefully when they are going to be shared, a behavioral indication of self-presentational concern.

A two-way ANOVA revealed an interaction between photo-taking goal and ability to delete on enjoyment (F(1,586) = 8.14, p < .01, \( \omega_p^2 = .012 \)). While there was no
effect of Ability to Delete in the Self-Goal condition, \((F(1, 586) = 4.49, p = .22)\), there was in the Share-Goal condition, such that making it salient that deleting is possible during the experience made them enjoy the experience more \((F(1, 586) = 27.29, p < .001, \omega_p^2 = .042)\). Self-presentational concern followed the same interaction pattern \((F(1, 586) = 7.73, p < .01, \omega_p^2 = .011)\). While there was no effect of Ability to Delete in the Self-Goal condition, \((F(1, 586) = 2.18, p = .14)\), there was in the Share-Goal condition, such that making it salient that deleting is possible during the experience made them feel less self-presentational concern \((F(1, 586) = 6.01, p = .01, \omega_p^2 = .008)\). As expected, a moderated mediation analysis (SPSS Macro, Model 7) found a significant indirect effect of self-presentational concern in the No Delete condition \((\text{Indirect effect} = -.193, SE = .056, 95\% \text{ CI} = [-.324, -.100])\), but not in the Delete condition \((\text{Indirect effect} = -.043, SE = .040, 95\% \text{ CI} = [-.129, .032])\).

Thus, providing people with the salient ability to delete photos during the experience moderates the effect of photo-taking goals on enjoyment. When individuals take photos for themselves, that is, when self-presentational concern should play a negligible role because there is no anticipated evaluation, the salient ability to delete does not have an effect on enjoyment. However, when individuals take photos to share, making it salient during the experience that they can delete photos leads them to feel less self-presentational concern than when they do not have the ability to delete photos. Note that being able to delete photos was not simply available to participants, but, by design, was also highly prominent during the experience. Other aspects of the photo-taking environment (e.g., knowing that the photos do not have to be shared, or that the photo album may be edited later) may be known from the start, but are not as salient during the
experience, and thus do not moderate the impact of photo-taking goals on enjoyment in the same way. We expect that in order for something to reduce self-presentational concern to a greater extent, it must be conspicuous during the experience itself, and perhaps even cause some behavior (e.g., deleting undesirable photos) on the part of the photo-taker.

**STUDY 5: SELF-PRESENTATIONAL CONCERN AFFECTS ENJOYMENT THROUGH ENGAGEMENT**

In the laboratory studies reported so far, participants in the photo sharing condition imagined that they would create an album to share with others. Study 5 seeks to replicate these findings when participants know they will actually share their photos with another person who will undergo the same bus tour experience. This study also tests whether self-presentational concern affects enjoyment via the distal mechanism of engagement in the experience.

**Methods**

One-hundred sixty-nine students (57.4% female; mean age = 22.2) at a Northeastern university participated in a study in exchange for payment. Participants were randomly assigned to one of two conditions in a 2-group (*Self-Goal, Share-Goal*) between-subjects design. In the *Self-Goal* condition, participants received the same photo-taking goal instructions as in the previous studies: to take photos for an album that they could look back on and keep for themselves. In the *Share-Goal* condition, however, participants were instructed to take photos for an album that they would subsequently share with another, randomly-assigned person in the lab. Though no participants knew
their partner before the study, they were given an opportunity to introduce themselves and talk for a few minutes before watching the travel video. Most participants were students at the same university, which brought to mind the possibility of seeing their partner again in classes or extra-curricular activities. Hence, this design created a controlled situation in which self-presentational concern was likely to operate.

Participants in both conditions experienced the same London city bus tour. After the bus tour ended, all participants responded to the same question from the previous studies about their enjoyment during the overall experience. Following the enjoyment item, participants responded to two questions about their level of engagement in the bus tour experience: “How much did you feel immersed in the bus tour experience?” on a 7-point Likert scale from 1 = “Not at all” to 7 = “Extremely” and “To what extent did you feel you were really part of the bus tour experience?” from 0 = “Felt I was not at all part of the experience” to 100 = “Felt I was entirely part of the experience” (Diehl, Zauberman, and Barasch 2016). Because these two items were on different scales, they were standardized and then averaged to form a measure of Engagement ($r(169) = .74, p < .001$). All participants were also asked the same single-item self-presentational anxiety question used in Study 3. Finally, participants in the share condition actually had their partners come over to their computers to look at the photos they took during the bus tour.

**Results**

**Enjoyment.** Replicating our findings from the previous studies, participants enjoyed the experience less in the sharing condition ($M = 3.92, SD = 1.44$) than the self condition ($M = 4.44, SD = 1.45$; $F(1,167) = 5.42, p = .02, \omega_p^2 = .025$).
**Self-presentational Concern.** Self-presentational concern was also greater among individuals who were taking photos to share ($M = 4.82, SD = 1.64$) than those who were taking photos for themselves ($M = 3.80, SD = 1.61$; $F(1,167) = 16.50, p < .001, \omega_p^2 = .084$).

**Engagement.** In addition, participants felt less engaged when they took photos to share with their partner ($M = -.19, SD = .99$) than when they took photos for themselves ($M = .16, SD = .86$; $F(1,167) = 6.10, p = .01, \omega_p^2 = .029$).

**Mediation Analysis.** We used the bootstrapping technique for estimating multi-step mediation with 10,000 samples (Hayes, Preacher, and Myers 2011; SPSS Macro PROCESS, Model 6) using Photo-taking Goal condition as the independent variable ($Self-Goal = 0$; $Share-Goal =1$), Self-presentational Concern as the first mediator, Engagement as the second mediator, and Enjoyment as the dependent variable. The 95% confidence interval for the total model did not include zero, indicating that self-presentational concern mediates the effect of photo goals on enjoyment through its effect on engagement (Indirect Effect = -0.193, SE = 0.063; 95% C.I. = [-.360, -.097]). The path model with estimated coefficients is displayed in Figure 3.

**Discussion**

These findings replicate and extend our findings from the previous studies. We show that individuals who take photos to share (in this experiment, with a particular person) enjoy their experience less than those who take photos for themselves. In addition, we find that this effect is driven by feelings of self-presentational concern during the experience. Importantly, both participants know they experienced the same event, though separately at their respective work-station. As such, they know that their
partner is aware of any limitations of the types of photos that could be taken; still, taking photos to share heightens self-presentational concern and lowers enjoyment.

Further, we find additional mediational evidence as to how self-presentational concern affects enjoyment: through its effect on engagement. Those with sharing goals feel stronger self-presentational concern, which makes them less engaged in the experience, and in turn causes them to enjoy the experience less.

**STUDY 6: THE EFFECT OF SHARING WITH DIFFERENT AUDIENCES**

In the previous study, we demonstrated that sharing goals reduce enjoyment when people actually share their photos with a peer in the lab who went through the same experience. In Study 6, we manipulate the closeness of the audience with whom participants imagine sharing their photos. Within social interactions, some audiences carry greater prospect of interpersonal evaluation, which in turn, increases the anxiety people experience from communicating with those individuals (e.g., Schlenker and Leary 1982; Gynther 1957). In particular, social interactions with family and close friends rarely lead to the same level of social anxiety or shyness as other situations (Zimbardo 1977). Thus, sharing photos with close others may not induce the same level of self-presentational concern relative to sharing photos with acquaintances or classmates, because people are less likely to expect that close friends would judge them (or change their opinions of them) from viewing their photos (e.g., Tice, Butler, Muraven, and Stillwell 1995). In addition, there is less uncertainty about close friends’ expectations (e.g., Houghton et al. 2013), and uncertainty is a major antecedent of social anxiety (Dibner 1958; Pilkonis 1977). To the extent that sharing with closer others leads to lower
levels of self-presentational concern, it should moderate the effect of sharing goals and reduce the negative effect of sharing on enjoyment.

In this study, we again test whether self-presentational concern affects enjoyment via the distal mechanism of engagement in the experience.

Methods

One-hundred fifty-three students (44.4% female; mean age = 23.7) at a Northeastern university participated in a study in exchange for payment. All participants experienced the same London bus tour from the previous study.

Participants were randomly assigned to one of three experimental conditions (Self-Goal, Share-Goal-Acquaintances, Share-Goal-Friends) in a between-subjects design. The Self-Goal condition was given the same instructions as before: to take photos for a personal album. In the two Share-Goal conditions, participants were given a short description of GooglePlus, a social networking website that allows people to share content selectively to “Circles” of selected groups of people. In these two conditions, participants were told to imagine that they were taking photos to share with one of their GooglePlus Circles. Since audience size can affect the extent to which individuals share self-presentational content or feel anxiety (Barasch and Berger 2014; Jackson and Latané 1981), we hold audience size constant at 10 people. We then manipulated the closeness of the audience in the Circle of 10 people: participants in the Share-Goal-Acquaintances condition were told to take photos to share with a Circle of 10 acquaintances, while participants in the Share-Goal-Friends condition were told to take photos to share with a Circle of 10 close friends.
After the bus tour experience, reported on how much they enjoyed the experience, how engaged they felt in the experience ($r(153) = .89; p < .001$), and how anxious they felt during the experience with the same items that were used in Study 5.

**Results**

**Enjoyment.** An ANOVA revealed a significant effect of Photo-taking Goal on enjoyment ($F(2,150) = 3.96, p = .02, \omega_p^2 = .037$). Consistent with results from our previous studies, relative to taking photos for the self ($M = 5.55, SD = 1.20$), taking photos to share with a circle of acquaintances decreased participants' enjoyment ($M = 4.92, SD = 1.58; t(102) = 2.36; p = .02, \omega_p^2 = .042$). However, audience closeness moderated the effect of Photo-taking Goal on enjoyment. When taking photos to share with a circle of close friends ($M = 5.60, SD = 1.24$), participants enjoyed the experience more than when taking photos to share with acquaintances ($t(99) = 2.52; p = .01, \omega_p^2 = .051$) and just as much as when taking photos for a personal album ($t(102) = .20; p = .84$).\(^5\)

**Self-presentational concern.** Ratings of self-presentational concern during the experience were also affected by Photo-taking Goal ($F(2,150) = 4.99, p < .01, \omega_p^2 = .050$). Similar to the previous studies, relative to taking photos for a personal album ($M = 2.74, SD = 1.67$), taking photos to share with a circle of acquaintances increased feelings of self-presentational concern ($M = 3.76, SD = 1.99, t(102) = 2.96; p < .01, \omega_p^2 = .070$).

\(^5\)We also replicated these findings in another study (n=214) that did not control for audience size. In that study, instead of sharing with an acquaintance Circle, participants imagined sharing with all their contacts on GooglePlus (including friends and acquaintances, similar to a Facebook post). The other two conditions (Self-Goal and Share-Goal-Friends) were identical to this study. The pattern of results is the same as in the study reported here.
However, when taking photos to share with a circle of close friends ($M = 2.90$, $SD = 1.59$), participants felt less self-presentational concern than when taking photos to share with acquaintances ($t(99) = 2.45$; $p = .02$, $\omega_p^2 = .048$) and just as much as when taking photos for a personal album ($t(102) = .47$; $p = .64$).

**Engagement.** A one-way ANOVA revealed a significant effect of Photo-taking Goal on engagement ($F(2,150) = 6.77$, $p < .01$, $\omega_p^2 = .070$). Compared to taking photos for the self ($M = .05$, $SD = .89$), taking photos to share with a circle of acquaintances decreased participants’ engagement ($M = -.37$, $SD = 1.10$; $t(102) = 2.25$; $p = .03$, $\omega_p^2 = .038$). However, when taking photos to share with a circle of close friends ($M = .32$, $SD = .80$), participants felt more engaged in the experience than when taking photos to share with acquaintances ($t(99) = 3.64$; $p < .001$, $\omega_p^2 = .109$) and just as much as when taking photos for a personal album ($t(102) = 1.44$; $p = .15$).

**Mediation Analysis.** Finally, we conducted a bootstrap analysis for estimating multi-step mediation with 10,000 samples (SPSS Macro PROCESS, Model 6) using Photo-taking Goal condition as the independent variable, Self-presentational Concern as the first mediator, Engagement as the second mediator, and Enjoyment as the dependent variable. Replicating our effects from the previous studies, the 95% confidence interval for the comparison between *Self-Goal* and *Share-Goal-Acquaintances* did not include zero, indicating that self-presentational concern mediates the effect of photo goals on enjoyment through its effect on engagement (Indirect effect = -.072, SE = .056; 95% C.I. = [-.244, -.007]). As expected, for the comparison between *Self-Goal* and *Share-Goal-Friends*, self-presentational concern and engagement did not mediate the effect of photo goals on enjoyment (Indirect effect = -.001, SE = .013; 95% C.I. = [-.051, .013]).
Discussion

This study provides further support for the self-presentational mechanism between photo-taking goals and enjoyment. In this study, we manipulate the closeness of the sharing audience and show that it moderates the effect we found in the previous studies. That is, having people imagine that they will share their photos with close friends makes the experience significantly more enjoyable than imagining that they will share with acquaintances, and just as enjoyable as taking photos for one’s own personal album and memories. We again show that this effect is driven by feelings of self-presentational concern, which in turn affect how engaged people feel during the experience.

Note, however, that self-presentational concern is unlikely to increase monotonically with distance from one’s current self. For instance, when one truly does not care about the people viewing one’s photos (such as complete strangers they will never see again), self-presentational concern may not emerge or diminish enjoyment at all.

GENERAL DISCUSSION

Experiences are vital to the lives and well-being of consumers, and understanding the factors that affect those experiences is important both to consumers in their pursuit of happiness and to those who create and market experiences. Experiences also happen to be widely shared with others through written and verbal communication, and as we examine, through photos. In fact, more and more of our lives now include photo-taking to capture experiences as they unfold, and millions of those photos are shared each day through social media and other channels. While prior research on sharing has examined the effect
of sharing after the experience, our findings highlight the importance of understanding how salient sharing goals during the experience shape the experience itself.

Across six field and laboratory studies, we investigate how taking photos to share with others influences consumers’ enjoyment of an experience. Compared to taking photos for one’s own memories, taking photos to share leads people to enjoy their experiences less. This effect holds across several real experiences, such as tourist visits and family holidays (Studies 1 and 2), as well as in more controlled laboratory settings with a virtual photo-taking experience that simulates the real world (Studies 3-6). The effect exists when people naturally choose their own photo-taking goals (Study 1) and when photo-taking goals are experimentally induced (Studies 2-6).

We also show that these effects on enjoyment translate into outcomes with behavioral implications, including people’s likelihood to recommend an experience to others (Study 1) and their desire to repeat a similar experience in the future (Study 3). Further, while people may simultaneously pursue multiple goals when taking photos, we show that the ultimate effect of photo-taking goals on enjoyment depends on which goal is most salient during the experience (Study 3).

Across these studies, we demonstrate that negative effects of photo-sharing goals on enjoyment are due to feelings of self-presentational concern during the experience. Taking photos to share with others increases feelings of anxiety to present oneself in a positive light, which in turn reduces enjoyment during the experience. Our laboratory studies establish direct support for the role of self-presentation via both mediation (Studies 3, 5, and 6), and moderation by individual differences (Study 4) and features of the photo-taking environment that shift self-presentational concern (Study 6). We also
show indirect evidence for this mechanism through memory perspective and photo content: creating an album to share makes people more likely to remember the experience from a third-person perspective, as well as to select photos with smiling people, posed (vs. candid) format, and more typical holiday content (Study 2). We further demonstrate that besides reducing enjoyment directly (Study 3), self-presentational concern can also lower enjoyment indirectly by lowering engagement with the experience (Studies 5 and 6). Our moderation evidence also highlights boundary conditions for these effects. Taking photos to share is less likely to decrease enjoyment when the ability to actively delete photos is salient during the photo-taking process (Study 4 discussion) or when people are sharing exclusively with close friends who are less likely to judge them based on their photos (Study 6).

**Theoretical Contributions**

The present research offers several novel insights for consumer research. While a variety of prior work has shown the personal benefits of sharing experiences with others (e.g., from self-disclosure or communicating word-of-mouth; Tamir and Mitchell 2012; Reis et al. 2010; Lambert et al. 2013), most of that work has only examined the *positive* effects of sharing *after the experience is over*. Our work highlights the “other side” of sharing: if the sharing goal is salient *during the experience*, this active intention to share in the future can *negatively* affect the current experience.

Relatedly, we advance prior research on impression management and self-presentation by identifying a highly prevalent behavior that can impose hedonic costs that is rooted in desires to self-present. Though previous work has shown that public (versus private) situations can trigger anxiety about how one will be judged by others (Schlenker
and Leary 1982; Baumeister 1982), this prior work has not explored how even anticipating future self-presentation can impact people’s hedonic enjoyment in the moment. We demonstrate that social concerns can be activated by photo-taking goals, even when the initial situation would not have necessarily done so.

Though people frequently choose to take photos to share, possibly because they anticipate the benefits of sharing their photos after an experience, they may not be aware that doing so can have unintended negative consequences during the experience itself. This possibility is supported by our intuition data: few people predict the direction of this effect, with over 80% saying that taking photos to share will either increase current enjoyment of an experience or have no effect whatsoever. Our research unifies the sharing literature with work examining the trade-offs between present and future sources of utility. Just as seeking greater future happiness can undermine psychological health and well-being in the present (Mauss et al. 2011; Schooler, Ariely, and Loewenstein 2003), seeking future utility from sharing photos can diminish utility from other sources in the present.

Our findings are also the first to document when and how the process of taking photos to share can alter that very experience. While some research has begun to explore how taking photos in general can affect different aspects of consumer utility (Diehl, Zauberman, and Barasch 2016; Henkel 2014), no prior work has considered the various goals people pursue when taking photos, and how these goals impact their experiences. By highlighting situational and dispositional factors that matter in this context, we also contribute to the literature on experiential consumption (Van Boven and Gilovich, 2003; Kahneman et al. 2004), which has not looked closely at the specific elements that can
improve or detract from our experiences. More generally, this work helps us understand how new technologies, such as camera phones and social media, reshape consumer behavior and influence how people experience their lives.

**Implications**

Our work also has a number of substantive contributions. People share hundreds of millions of photos every day (Facebook 2013; Systrom 2014). Capitalizing on the powerful appeal of the sharing goal, companies are increasingly providing consumers with reminders and discounts for sharing their photos with others (e.g., Mancini 2014; Veix 2013). However, providing services to facilitate easy sharing of experiences might have unintended costs if it reduces the enjoyment people feel during the experience itself, with detrimental effects on people’s retrospective evaluations of those events. Companies invest substantial resources to create experiences that will maximize consumer enjoyment (Pine and Gilmore 1999; Schmitt 1999), so encouraging consumers to take photos to share may be counterproductive to these objectives. Moreover, as we saw in Studies 1 and 3, these negative effects on consumers’ experiences may subsequently affect their propensity to repeat purchase or recommend the experience to others.

However, our work also indicates an opportunity for marketers to highlight occasions for consumers to take photos for their own personal memories (rather than to share). Though some restaurants now prohibit diners from taking photos during their meals and some musicians request that fans refrain from taking photos during their concerts (Stapinski 2013; Wright 2012), some consumers will inevitably resent or disregard these policies and take photos anyway. Instead of fighting a photo-taking trend that is only increasing, companies and entertainers may want to find ways to encourage
consumers to stop taking photos to instantly share on social media, and instead to take photos so they can relive their treasured experiences in the future.

Similarly, consumers themselves might benefit from focusing their photo-taking objectives on their own memories instead of on sharing, so that important events in their lives are not disrupted by self-presentational concern. Doing so might help people get the most out of their “extraordinary” experiences (e.g., visiting Disney World, attending a Super Bowl) that are rare or special. Moreover, since photo-taking and sharing are becoming increasingly common during a wide array of mundane, “ordinary” experiences (e.g., cooking dinner at home, shopping at the mall), this shift in goals might also increase people’s well-being on a daily basis.

**Directions for Future Research**

As with any investigation into a new research question, there are many interesting new directions to explore. While the current research focuses on the enjoyment consumers experience during an event itself, taking photos clearly involves other sources of utility. Future work should consider additional ways that photo-taking goals might impact overall consumer utility, such as influencing enjoyment during the photo album creation process or during the actual fulfillment of those goals (i.e., revisiting or sharing photos after the experience). While we have demonstrated that taking photos to share can decrease enjoyment of the experience itself, it is possible that the additional utility associated with sharing one’s experiences (e.g., Reis et al. 2010; Lambert et al. 2013) outweighs this discrepancy in longer-term evaluations. Though our studies control for other sources of utility in order to isolate the effects on the experience itself and the self-presentational mechanism, future work should examine other sources of utility from
photo-taking and contribute to a more integrative understanding of individual and social experiences over time.

Future work could also explore how photo-taking goals affect other outcomes besides enjoyment. We have found initial evidence that photo-taking goals affect memory perspective, whether people remember their experience from an “actor” or from an “observer” perspective. However, these goals may also impact other aspects of memory, such as people’s ability to remember specific details of the event and their subjective impressions of how much they remember. Examining other features of the photographs that result from each of these photo-taking goals might also yield interesting insights.

Given self-presentational motives, taking photos to share might spur people to take better-composed, higher quality photos, or to capture especially positive aspects of their experiences (e.g., the fun parts of a trip, leaving out the unhappy ones). Over time, people might benefit from their attempts to take the “best” pictures to share—after enough time has passed, what most impresses our friends may also be what most appeals to us. On the other hand, these photos might seem less “authentic” or representative of the true experience, and might contribute to less vivid or even false memories.

Future research should also investigate additional situational variables that might moderate the influence of photo-taking goals on enjoyment. While we manipulated audience closeness, other features of the audience could also influence the effects of taking photos to share. For example, in almost all of our studies, people took photos to share with others who were not involved in the same experience. Taking photos to share with others who experienced the same event with them might induce less anxiety (because there is less concern about capturing it in a certain way if the person
experienced it too) or more anxiety (because one feels more pressure from direct photo comparison). In addition, while we primarily investigated the effect of photo-taking goals on enjoyment for positive or fun events (e.g., holiday and travel experiences), it is possible that the effect would be different for negative or boring events. For example, during a visit to a war memorial, taking photos for personal memories might not be particularly appealing, whereas taking photos to share with others could bring additional utility from the anticipation of being able to share one’s sadness and gain social support (Graham et al. 2008; Clark and Taraban 1991). Similarly, for particularly important experiences (e.g., once-in-a-lifetime), taking photos for the self might be just as stressful as taking photos to share due to feelings of pressure to capture the moment faithfully for posterity. Attributes of the photo-taking medium or communication channel could also play a role. For example, taking a photo to share on Snapchat could evoke less anxiety if people believe that the photo will be permanently deleted shortly after being viewed. In general, to the extent that a photo feels less public or more fleeting, self-presentational concern may diminish and enjoyment may increase.

In sum, by exploring how photo-taking goals impact consumers’ evaluations of their experiences, the current research merely scratches the surface of an understudied behavior. Understanding the psychological effects of photo-taking has direct implications for well-being, memory, social behavior, and a variety of marketing applications. We close this paper with a call for future work to further explore the role photo-taking plays in people’s lives, as this activity only continues to expand in breadth and importance.
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Figure 1: Photo-taking experience in the laboratory.
Figure 2: Enjoyment results in Study 4. Dotted lines represent ± 1 standard error. Mean trait self-consciousness for this study was 20.91 ($SD = 6.70$).
Figure 3: Mediation results in Study 5.
APPENDIX

APPENDIX STUDY 1

PHOTO-TAKING GOALS IN THE REAL WORLD

In order to assess the relationship between enjoyment and people’s naturally-chosen photo-taking goals, we collected data on people’s photo-taking behavior during a recent experience. We asked a sample of participants to describe the last situation during which they took a photo and to report how much they enjoyed that experience. Then, we asked them to select which goal(s) they had in mind in the moment of taking the photo. Although these data are correlational, it allows us to examine our hypothesis when goals are evoked spontaneously across a wide range of actual experiences.

Methods

Two-hundred three individuals (40.9% female; mean age = 32.0) participated in an online study in exchange for payment via Amazon.com’s Mechanical Turk. The recruitment announcement specified that participants should be over 18 years of age and U.S. residents.

All participants were asked to think back to the last photo they took, and to take some time to describe the photo and experience they were photographing in an open-ended text box. Participants also reported when the photo was taken from the following options: “Today”, “Yesterday”, “Two days ago”, “Within the past week”, “Within the past month”, and “Within the past year”. Then, participants were asked “How much did you enjoy the experience that you were taking a photo of” on a 7-point Likert scale ranging from 1 = “Not at all” to 7 = “Extremely.”
On a separate page, participants were then asked, “At the moment of taking the photo, what was your primary goal for taking this photo?” and selected at least one answer from a multiple-choice list including “I took the photo for myself (personal memories)”, “I took the photo to share (with other people)”, “I took the photo with a different goal in mind (neither for myself or to share)” and “I took the photo without any particular goal in mind”.

Results

In line with the descriptive reporting of goals in the Introduction, a majority of respondents (86.7%) reported that they took photos for one of two goals: to capture memories for themselves (30.0%) or to share with others (35.5%), or a combination of both these goals (21.2%). Only a small proportion of people reported that they took photos for another goal (8.4%) or with no particular goal in mind (4.9%). In order to examine the effects of our two primary goals more cleanly, in this study we will focus on individuals who reported pursuing only the self goal or only the share goal during their latest photo-taking encounter (n = 133). We examine the issue of pursuing multiple goals in Study 3 of the paper, and further discuss the issue in the General Discussion.

For those who took a photo with one of these two goals in mind, 18.0% said that the photo was taken today, 15.8% said it was yesterday, 18.0% said it was two days ago, 18.0% said it was within the last week, 16.5% said it was within the past month, and 13.5% said it was within the past year. There were no differences in these frequencies across those who took a photo for themselves and those who took a photo to share ($\chi^2 = 6.68, p = .25$).
To examine the effect of photo-taking goal on enjoyment, we estimated a regression with photo-taking goal as the independent variable and enjoyment as the dependent variable. Photo-taking goal was coded so that self goal was equal to 0 and share goal was equal to 1. Consistent with our predictions, we found a significant effect of photo-taking goal on enjoyment (B = -.585, SE = .215, t(131) = -2.73, p < .01), such that taking photos to share diminished enjoyment relative to taking photos for the self. This effect of photo-taking goals on enjoyment holds when the time that the photo was taken is included in the model.

Discussion

This study provides initial evidence in support of our hypothesis. When people take a photo with a share goal in mind, they report that they enjoyed the experience less than when they take a photo with a self goal in mind. Thus, in a situation where people are freely selecting their own photo-taking goals in their own experiences, taking photos with the intent to share them is associated with harmful effects on enjoyment.

While this study supports our hypothesis, it relied on participants’ recollection both for their reported photo-taking goal and for their evaluation of enjoyment. Even though we asked people to tell us what they had in mind at the “moment of taking the photo,” it is possible that people misremember what their photo-taking goal was during the experience itself, and that what they eventually ended up doing with the photos influenced their answers. In Study 1 of the paper, we ask participants to report their photo-taking goals in the course of an actual experience.

Another limitation of these correlational data is that the types of experiences where people remember having a self goal versus a share goal might be different. That is,
it is possible that experiences where individuals take photos to share are those that are less enjoyable on their own than experiences where individuals take photos for themselves. In all studies reported in the paper, we control the nature of the experience by surveying individuals going through the exact same experience.
APPENDIX STUDY 2

PHOTO-TAKING GOALS AT A CAMPUS LANDMARK

In another correlational study, we replicated the results of Study 1 during an even more meaningful real-life experience: graduation weekend at a university. Leading up to graduation, the university ran a social media campaign encouraging people to post photos of the celebrations on different social media platforms: electronic billboards on campus advertised a specific hashtag (#[xxx]Grad), accompanied by smiling students in graduation regalia and the tagline “Capture the Moment”. During graduation weekend, we surveyed one-hundred eighty-six individuals (56.5% female; mean age = 33.3) taking photos at a popular campus statue. After answering how much they enjoyed their experience at the statue, participants were asked “Are you planning to post any of the photos you just took at the [xxx] statue on social media (Facebook, Instagram, Twitter, etc.)?” Consistent with Study 1, we found a marginally-significant effect of photo-taking goal (B = -.610, SE = .328, t(184) = -1.86, p = .07), such that those taking photos to share on social media (n = 126) enjoyed the experience less than those who were not (n = 60). This provides additional evidence that individuals enjoy their experience less when they take photos to share, even during a very important real-life experience.

Moreover, we found a significant effect of photo-taking goal on self-presentational concern (B = -1.667, SE = .622, t(184) = 2.68, p < .01), such that taking photos to share made people feel more anxious during the experience, as well as an effect on engagement (B = -.873, SE = .416, t(184) = -2.10, p = .04), such that taking photos to share made people less immersed in the experience. Estimating the same multi-step mediation model as Studies 5 and 6, we again found evidence that self-presentational
concern mediates the effect of photo goals on enjoyment through its effect on engagement (Indirect Effect = -0.067, SE = 0.044; 95% C.I. = [-0.187, -0.005]). In particular, we found that taking photos to share increased self-presentational concern ($a_1 = 1.67, p < .01$) and also decreased engagement in the experience ($a_2 = -0.72, p = .09$). The more self-presentational concern participants felt, the less engaged they were in the experience ($a_3 = -0.09, p = .06$). Further, the more self-presentational concern participants felt ($b_1 = -0.06, p = .06$) and the less engaged they felt ($b_2 = 0.45, p < .001$), the less they enjoyed the experience as a whole. Once we included self-presentational concern and engagement in our model, the effect of photo goals on enjoyment significantly decreased from $c = -0.61, p = .07$ to $c' = -0.12, p = .67$. 
APPENDIX STUDY 3

THE EFFECT OF THE SALIENT ABILITY TO DELETE PHOTOS DURING THE EXPERIENCE

In Study 4, we showed that the more chronically salient self-presentational concern is for an individual, the more a sharing goal reduces enjoyment of that person’s experience relative to a self goal. In this ancillary study, we alter the situational salience of self-presentational concern by changing a feature of the photo-taking environment, and thus experimentally moderate the effect of photo-taking goals on enjoyment.

In the previous studies, taking photos to share with others reduced enjoyment even when participants could decide after the experience which photos to include in their album, as long as the goal to share was salient during the experience. In order to reduce self-presentational concern when a share-goal is actually active, we target the experience itself and manipulate whether, during the bus tour experience, it is salient for participants that they have the ability to select which photos to keep. To do that, half the participants were given the opportunity to “delete” photos from their “camera” during the experience, which was made highly salient to them. We predict that individuals in the share condition will be more likely to delete photos, a self-presentational behavior, and that making it salient that photos can be deleted during the experience will reduce self-presentational concern and attenuate the negative effect on enjoyment.

Methods

Five-hundred ninety individuals (58.6% female; mean age = 25.8) at a Northeastern university participated in a study in exchange for payment. All participants experienced the same London bus tour from the first laboratory study.
We randomly assigned participants to one of four conditions in a 2 (Photo-taking Goal: Self-Goal, Share-Goal) x 2 (Ability to Delete: No Delete, Delete) between-subjects design. We manipulated photo-taking goal as we did before: participants imagined that they were taking photos either for themselves or to share with others. To manipulate the ability to delete photos from one’s album during the experience, we changed a feature of the photo-taking interface. Half the participants experienced the tour and took photos the same way that they did in the previous studies (No Delete condition), while half the participants were told that they could delete photos they had taken by clicking on a small “x” at the top-right of the image (Delete condition). This feature was in place and salient as they experienced the tour. For an example of the Delete interface, see figure below.

![Visual instructions for delete interface. Participants were able to delete photos from their album while they experience the bus tour by clicking an “x” in the top right-hand corner of the photo.](image)

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After the bus tour ended, all participants responded to the same question about their overall enjoyment during the experience. Then, to measure self-presentational concern, all participants responded to the same three questions from Study 3 (α = .63).

**Results**

**Photos taken and deleted.** There were no differences in the total number of photos initially taken across Photo-taking Goal conditions (F(1,586) = .07, p = .79) and Ability to Delete conditions (F(1,586) = .03, p = .85), nor was there a significant interaction (F(1,586) = .55, p = .46). On average, participants took 20 photos across the 4-minute bus tour (M = 19.57, SD = 14.85, Min = 0, Max = 126).

Focusing on the two conditions where photo deletion was possible, we find a significant effect of photo-taking goal on the number of photos deleted (F(1,269) = 10.86, p < .01). Participants in the Share-Goal condition deleted more photos (M = 4.36, SD = 4.44) than participants in the Self-Goal condition (M = 2.74, SD = 3.61).

**Enjoyment.** A two-way ANOVA revealed only the predicted Photo-taking Goal by Ability to Delete interaction effect on enjoyment (F(1,586) = 8.14, p < .01, ωp² = .012). Consistent with the previous studies, participants in the No Delete condition enjoyed the experience less when they took photos to share with others (M = 3.97, SD = 1.58) than when they took photos for themselves (M = 4.52, SD = 1.65; F(1,586) = 10.44, p = .001, ωp² = .016). However, when it was salient throughout the experience that participants were able to delete photos from their albums, there was no difference between the two Photo-taking Goal conditions (MShare-Goal = 4.91, SDShare-Goal = 1.48 MSelf-Goal = 4.74, SDSelf-Goal = 1.40; F(1,586) = .81, p = .37).
Looking at the data another way, while there was no effect of Ability to Delete in the Self-Goal condition, \( (F(1,586) = 4.49, p = .22) \), there was in the Share-Goal condition, such that making it salient that deleting is possible during the experience made them enjoy the experience more \( (F(1, 586) = 27.29, p < .001, \omega_p^2 = .042) \). Figure below displays these results.

![Enjoyment results. Error bars represent ± 1 standard error.](image)

**Self-presentational Concern.** A two-way ANOVA revealed the predicted Photo-taking Goal by Ability to Delete interaction on self-presentational concern \( (F(1,586) = 7.73, p < .01, \omega_p^2 = .011) \). Consistent with the previous studies, participants in the No Delete condition felt more self-presentational concern when they took photos to share with others \( (M = 3.45, SD = 1.36) \) than when they took photos for themselves, \( (M = 2.69, SD = 1.24; F(1,586) = 27.87, p < .001, \omega_p^2 = .044) \). However, in the Delete condition, when the ability to delete photos from their albums was salient for participants, there was
no difference between the two photo-goal conditions ($M_{Share-Goal} = 3.08, SD_{Share-Goal} = 1.35; M_{Self-Goal} = 2.91, SD_{Self-Goal} = 1.18; F(1,586) = 1.18, p = .28$).

As expected, while there was no effect of Ability to Delete in the Self-Goal condition, ($F(1,586) = 2.18, p = .14$), there was in the Share-Goal condition, such that making it salient that deleting is possible during the experience made them feel less self-presentational concern ($F(1,586) = 6.01, p = .01, \omega^2_p = .008$).

**Mediation analyses.** We conducted a moderated mediation analysis using the bootstrap procedure with 10,000 samples (Preacher, Rucker, and Hayes 2007; MacKinnon, Fairchild, and Fritz 2007; SPSS Macro PROCESS, Model 7) to test the process by which photo-taking goals affects enjoyment. Specifically, we predicted that in the No Delete condition, taking photos to share would increase self-presentational concern, which would decrease enjoyment. However, in the Delete condition, we did not expect photo-taking goals to affect feelings of self-presentational concern or enjoyment. Our mediation model included Photo-taking Goal as the independent variable (Self-Goal = 0; Share-Goal =1), Ability to Delete as the moderator variable (No Delete = 0; Delete = 1), Self-presentational Concern as the mediator variable, and Enjoyment as the dependent measure. We find a significant indirect effect of self-presentational concern in the No Delete condition (Indirect effect = -.193, SE = .056, 95% CI = [-.324, -.100]). That is, we replicate our mediation results from Study 3: taking photos to share increased self-presentational concern ($a = .76, p < .001$), and as self-presentational concern increased, enjoyment decreased ($b = -.35, p < .001$). Once we included self-presentational concern in our model, the effect of photo goals on enjoyment significantly decreased from $c = -.56, p < .01$ to $c' = -.32, p = .08$, suggesting full mediation. However, we did not find a
significant indirect effect of self-presentational concern in the Delete condition (Indirect effect = -.043, SE = .040, 95% CI = [-.129,.032]).

Discussion

As predicted, providing people with the salient ability to delete photos during the experience moderates the effect of photo-taking goals on enjoyment. When individuals take photos for themselves, that is, when self-presentational concern should play a negligible role because there is no anticipated evaluation, the salient ability to delete does not have an effect on enjoyment. However, when individuals take photos to share, making it salient during the experience that they can delete photos leads them to feel less self-presentational concern than when they do not have the ability to delete photos. Consistent with our hypothesis, people delete more photos when they are taking photos to share compared to when they were taking photos for themselves. In fact, being able to delete photos while on the bus tour causes individuals in the share condition to enjoy their experience just as much as individuals in the self condition.

Note that being able to delete photos was not simply available to participants, but, by design, was also highly prominent during the experience. Other aspects of the photo-taking environment (e.g., knowing that the photos do not have to be shared, or that the photo album may be edited later) may be known from the start, but are not as salient during the experience, and thus do not moderate the impact of photo-taking goals on enjoyment in the same way. We expect that in order for something to reduce self-presentational concern to a greater extent, it must be conspicuous during the experience itself, and perhaps even cause some behavior (e.g., deleting undesirable photos) on the part of the photo-taker.
APPENDIX STUDY 4

PHOTO-TAKING GOALS AND AGE

Individual differences may also play an important role in shaping how people approach photo-taking. Across our studies, we do not find that age or gender interacts with the effects of photo-taking goals on enjoyment. However, only a small proportion of our behavioral lab and Mturk samples were 60 years of age or older. To explore the influence of age more carefully, we specifically recruited younger (18-25 years old) and older (60-85 years old) participants via Qualtrics panel for an unreported study. We predicted that older participants with a sharing goal would experience less self-presentational concern, since they are less likely than young consumers to use technology to share with distant others (e.g., through social media). Consistent with this prediction, age moderated the effect of photo-taking goals: within the older age bracket, taking photos to share did not induce as much anxiety, and thus did not decrease enjoyment.
APPENDIX A

NUMBER OF PHOTOS TAKEN ACROSS LAB STUDIES

**Study 3:** Across the three photo-taking conditions, there was a no difference in the number of photos taken ($F(2,199) = 1.99$, $p = .14$). On average, participants took 13 photos across the 3-minute safari ($M = 13.19$, $SD = 7.52$, Min = 2, Max = 41).

**Study 4:** There was no difference in the number of photos taken across conditions ($M_{Self-Goal} = 24.66$, $SD_{Self-Goal} = 14.83$; $M_{Share-Goal} = 23.36$, $SD_{Share-Goal} = 14.96$; $F(1,222) = .42$, $p = .52$).

**Study 5:** There were again no differences in the number of photos taken across conditions ($M_{Share-Goal} = 19.04$, $SD_{Share-Goal} = 16.12$; $M_{Self-Goal} = 23.08$, $SD_{Self-Goal} = 20.07$; $F(1,167) = 2.01$, $p = .16$).

**Study 6:** There were no differences in the number of photos taken across the three conditions ($F(2,192) = 1.18$, $p = .31$). On average, participants took 18 photos on the London bus tour ($M = 18.31$, $SD = 10.43$, Min = 1, Max = 56).

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6Due to a computer error in the photo-taking software, we obtained this data for only 202 of the 207 participants.
APPENDIX B

MEMORY PERSPECTIVE MEASURE USED IN STUDY 2

Then, participants responded to a memory perspective measure, which served as an indirect measure of the self-presentation process (Pronin and Ross 2006). They were asked to rate that image in their head as either more from a first-person (actor) perspective, or more from a third-person (observer) perspective. The two perspectives were described as follows.

A. I saw the scene from my original point of view (not as an external observer would see it). I did not see myself in the image, since it was as though I was looking at the event through my own eyes.

B. I saw the scene as an observer might see it (not from my original point of view). I saw myself in the image, since it was as though I was looking at the event through the eyes of an observer.

In line with prior procedures, participants rated their memory perspective on a 7-point Likert scale ranging from 1 = “ Mostly A” to 4 = “Mixture of A and B” to 7 = “Mostly B”.

Photo Upload Instructions in Study 2

Before uploading their photos, participants reported which photo-taking devices they used during Christmas to take their photos. Participants used a variety of devices, including point-and-shoot cameras (10.1%), digital SLRs (11.0%), cell phones (94.3%), video cameras (.9%), and film cameras (.4%). Note that participants could take photos with more than one device, and thus percentages add up to more than 100%.

In the Self-Goal condition, participants were instructed “Now that Christmas is over, we would like you to create an album for yourself. Please select 10 photos from Christmas that you would like to make into a personal album, for you to keep just for
yourself, to look back on and remember the day. These should be the 10 photos that you are most excited to look back on, to keep your own memories alive.”

In the Share-Goal condition, they were instructed “Now that Christmas is over, we would like you to create an album to share. Please select 10 photos from Christmas that you would like to make into a shared album, for you to share on Facebook or other social media. These should be the 10 photos that you are most excited to share with all of your Facebook and other friends.”

Both conditions were then presented with an “Upload” function that allowed them to choose photos for their album. The system did not let them upload more than 10 photos, and if they accidentally uploaded a photo that they did not want in their album, they could remove it. The system warned participants if they tried to proceed with less than 10 photos, but did not prevent them from proceeding if they wanted to. Once they hit the final “Continue” button, the photos they had selected were stored onto our secure server.
APPENDIX C

PHOTO CODING GUIDE USED IN STUDY 2

PEOPLE: Are there any people in the photo? (0 = no people, 1 = yes people)

POSED: Is at least one person “posing” for the camera? That is, is this a photo where at least one person is acting posed, rather than acting naturally or spontaneously (i.e., not “candid”)? (0 = candid, 1 = posed)

SMILING: Is at least one person clearly smiling directly at the camera? Look for “upturned” corners of the mouth, and only say “yes” if it is definitely a smile (not a “smirk”, etc.) (0 = no smile, 1 = yes smile)

TYPICAL OF CHRISTMAS: Does this photo include items that are typical of Christmas, and would likely not be seen at another time of year (e.g., decorations, tree, lights, stockings, Santa, reindeer, gifts, poinsettia flowers, ornaments, candy canes, red and green objects, etc.)? These items can be anywhere in the photo (i.e., they do not have to be the primary “focus” of the photo. (0 = no Christmas items, 1 = yes Christmas items)
APPENDIX D

TRAIT SELF-CONSCIOUSNESS SCALE USED IN STUDY 5

(Scheier and Carver 1985)

Public self-consciousness

1. I’m concerned about my style of doing things.
2. I care a lot about how I present myself to others.
3. I’m self-conscious about the way I look.
4. I usually worry about making a good impression.
6. I’m concerned about what other people think of me.
7. I’m usually aware of my appearance.

Social anxiety

1. It takes time to get over my shyness in new situations.
2. It’s hard for me to work when someone is watching me.
3. I get embarrassed very easily.
4. It’s easy for me to talk to strangers.
5. I feel nervous when I speak in front of a group.
6. Large groups make me nervous.
APPENDIX E

META-ANALYSIS OF ALL STUDIES REPORTED IN PAPER

We examined the effect of taking photos to share across a range of contexts in the lab and the field, using multiple methods and approaches. Overall, 2,068 individuals participated in the nine studies reported somewhere in the manuscript. This diverse set of studies allows us to conduct a meta-analysis to estimate the overall effect size of taking photos to share across many settings. In this meta-analysis, we focused on conditions that were intended to test our primary hypothesis: the comparison between taking photos to share and taking photos for the self. Hence, we did not include conditions that were intended to further examine the process or to show where the negative effect of intended sharing would not hold (i.e., moderators). That is, we included the primary two conditions comparable across studies, and we excluded the *Equal-Goals* condition in Study 3, the *Delete* condition in the study reported in the discussion of Study 4, and the *Share-Goal-Friends* conditions in Study 6 and the study reported in the footnote.

For each study, we first used the means and standard deviations of each condition to compute Hedges $g$, the bias-adjusted estimate of the standardized mean difference (Hedges & Olkin, 2014). We then calculated a weighted mean, using inverse variance weights to assign more weight to studies with larger samples (Lipsey & Wilson, 2001). Overall, we find that participants enjoy the experience less when they take photos to share compared to when they take photos for themselves. The mean effect size across studies is 0.386 (95% CI [0.286, 0.485]).
CHAPTER 2

WHEN PAYMENT UNDERMINES THE PITCH: ON THE PERSUASIVENESS OF PURE MOTIVES IN FUNDRAISING

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Jonathan Berman
Deborah Small

ABSTRACT

Studies on “crowding out” document that incentives sometimes backfire—decreasing motivation in prosocial tasks. In the present research, we demonstrate an additional channel through which incentives can be harmful beyond motivation. When advocating for a cause, incentivized individuals are perceived as less sincere and are ultimately less effective in persuading others to donate. Further, the negative effects of incentives hold only when the incentive implies a selfish motive; advocates who are offered a matching incentive, which is not incompatible with altruism, perform just as well as those who are not incentivized. Thus, incentives may affect prosocial outcomes in ways not previously investigated: by crowding out individuals’ sincerity of expression and thus their ability to gain support for a cause.
Incentives sometimes have perverse effects. For activities that provide their own inherent reward, the introduction of an external motivator can displace intrinsic motivation and thereby reduce effort in those activities (for reviews, see Deci, Koestner, & Ryan, 1999; Gneezy, Meier, & Rey-Biel, 2011). Such effects are prevalent in prosocial behavior, where external incentives have been shown to backfire, or “crowd out” a wide range of actions, including volunteering (Gneezy & Rustichini, 2000a), pro-environmental behavior (Cardenas, Stranlund, & Willis, 1999), contributions to public goods (Falkinger et al., 2000), cooperation (Fehr & Rockenbach, 2003), and blood donations (Mellstrom & Johannesson, 2008; but see Lacetera & Macis, 2010).

These findings highlight the incompatibility, in people’s minds, between altruism and self-interest. Incentives represent an economic exchange performed for self-interested gain, which is incongruous with the communal norms associated with helping (Fiske, 1991). Thus, people judge others as less altruistic when they benefit from their good deeds (Lin-Healy & Small, 2013; Newman & Cain, 2014). Moreover, people often seek out costly or painful ways of helping to demonstrate that their motives are pure (Olivola & Shafir, 2013).

Incentives are typically thought to affect behavior through the channel of motivation. Therefore, past investigations of crowding out have examined effort, persistence, and monetary contributions allocated towards helping others. These measures make sense in contexts for which no special skills are needed, such that there is a close correspondence between effort and outcome (e.g., giving blood, recycling). However, sometimes doing good requires more than just effort. Fundraising, in
particular, requires the ability to communicate persuasively. The present research investigates this additional channel though which incentives may matter.

Specifically, we examine how incentives affect an advocate’s ability to persuade others to donate to a cause. We predict that, ceteris paribus, the best advocates for a cause are those whose motives are pure. Without any incentive, a caring individual will express his true concern for a cause in a way that appears sincere to others. However, when an incentive is introduced, the same action becomes disingenuous—impeding an individual from effectively communicating that they care.

We further expect that donors will be sensitive to the sincerity of an advocate’s pitch and this will affect their donations. When evaluating other people’s prosocial behavior, individuals place a strong emphasis on perceptions that they are genuine (Barasch, Levine, Berman, & Small, 2014), and respond negatively towards those with a possible ulterior motive (Fein & Hilton, 1994; Critcher & Dunning, 2011; Lin-Healy & Small, 2013; Newman & Cain, 2013). We predict that donors will detect less sincerity in persuaders who have been selfishly incentivized—even without knowing that incentives are present—and this will reduce their contributions.

**Study 1: Fundraising for a breast cancer charity**

Method

The first study took part in two phases. In phase one, 36 volunteers (66.7% female) were recruited at a community event raising money for an organization that supports breast cancer research and awareness. Participants were sampled from this event to target those who are likely to have a strong pre-existing motivation to help the cause.
Participants were asked to come independently to an isolated area of the event to participate in a study aimed to benefit the breast cancer organization.

Each participant met first with an instructions assistant, who told the volunteer (hereafter referred to as “persuader”) that he would make a pitch on video camera for the breast cancer organization. The video would later be shown to potential donors, and the persuader’s task was to do his best to persuade those individuals to donate to the cause.

Next, each persuader was assigned to condition in a two-group (*Incentive vs. No Incentive*) between-subjects design. In both conditions, the persuader read that others would subsequently view the video and have a chance to donate to the organization. In the *Incentive* condition, the persuader also read the following: “As a bonus, for every $10 that the potential donor gives to your charity organization, we will send you a $1 reward. In other words, the more money that someone donates to the cause, the more money you will be paid.” In the *No Incentive* condition, this statement was omitted. Each participant then signed a consent form agreeing to be videotaped. In this and in all subsequent studies, no one opted out of the study or refused payment after being assigned to condition, so selection cannot explain the findings.

The participant was then introduced to a condition-blind video assistant, who recorded the persuader’s charity appeal on videotape in a separate area. The video assistant instructed the persuader to begin speaking whenever he was ready. After the video was recorded, the participant was thanked and dismissed.

Phase two of the study consisted of a separate sample of 243 target donors (58.3% female; mean age = 26.1) who signed up to participate in a single week-long lab session at a northeastern university in exchange for payment. The number of target donors was
determined by the amount of participants who signed up in advance for the lab session. Target donors were told that they would watch a video of an individual who was asked to make an appeal for a charitable organization that he supports. They were also told that the person in the video would be speaking without a script, and that the video had not been edited in any way. There was no mention of incentives.

Each target donor was assigned to watch one recorded charity appeal video, randomly assigned, which was embedded in a survey. This resulted in six to seven target donors watching each video from the first stage of the study (243 target donors / 36 videos = 6.75 target donors per video).

After watching the appeal, target donors read that in addition to their standard participation fee of $10, they would receive an additional $3, which they could choose to keep or donate a portion to the cause advertised in the video. They were presented with a multiple choice question to indicate how much they would like to donate (any amount between $0 and $3 in one-dollar increments). All donations were sent to the organization after the conclusion of the study.

Results

*Persuader-level analysis*

Persuader-level analyses consist of coding 1) objective features of the videos, and 2) subjective judgments of the persuaders.

One condition- and hypothesis-blind research assistant coded each video in terms of length, and also whether the persuader spoke of a personal connection to the breast cancer cause. There were no differences across condition in the length of the appeal
($M_{\text{incentive}} = 42.00\text{ seconds, } M_{\text{no incentive}} = 46.82\text{ seconds; } t(34) = 0.46, p = .65$), the proportion of persuaders who mentioned that they knew someone who had been affected by breast cancer (incentive: 68%; no incentive: 76%; $\chi^2(1, N = 36) = 0.29, p = .59$), and the proportion who mentioned that they had a family member affected by breast cancer (incentive: 32%; no incentive: 53%; $\chi^2(1, N = 36) = 1.69, p = .19$).

In addition, two independent condition- and hypothesis-blind coders evaluated each persuader on three dimensions: how sincere they seemed in their appeal, how emotional they seemed in their appeal, and how much they seemed to care about the breast cancer organization (all on 7-point scales from -3 to 3). The two coders’ ratings were highly correlated for each item ($r_s > 0.8$), and all items were averaged to form an overall measure of perceived sincerity ($\alpha = .88$). An independent sample $t$-test revealed a significant effect of condition on perceived sincerity ($t(34) = -2.64, p = .01$). Coders judged the persuaders to be less sincere when they received an incentive ($M = .04, SD = 1.60$) than when they did not receive an incentive ($M = 1.27, SD = 1.14$).

**Target donor-level analysis**

To account for multiple target donors viewing each video, donation results were analyzed with a nested one-way ANOVA (i.e., hierarchical ANOVA) that controlled for the groupings of persuaders nested within the main factor of incentive condition. Persuaders were treated as random effects.

Consistent with our key hypothesis, incentives to persuaders significantly reduced donation amounts ($F(1,207) = 6.50, p = .01, \eta^2_p = .030$). Target donors gave less money
to charity when viewing a video appeal made by a persuader who had received an incentive ($M = $0.52, $SD = $0.89) than by a persuader who had not received an incentive ($M = $0.87, $SD = $1.15). Figure 1 displays the distribution of donations across the two conditions.

We report additional analyses in the Appendix.

**Study 2: Fundraising for a charity of choice**

Study 2 consisted of a different and larger sample of both persuaders and target donors, and also included follow-up surveys for both groups. The goal of this study was to replicate the previous findings, and to further investigate how target donors perceive persuaders and how persuaders perceive themselves.

**Method**

The second study followed the same overall design as Study 1, with exceptions as noted. In phase one, we recruited 93 students (64.5% female) from an on-campus service activities fair and from meetings of a wide variety of community-service organizations, rather than from an event for one specific cause. Participants signed up to come to a laboratory for a study aimed to benefit an organization of their choice.

In the lab, each student (hereafter referred to as “persuader”) met independently with a hypothesis-blind instruction assistant, who told him to make a pitch on video camera for a charitable organization of his choice. Similar to Study 1, the persuader was told that the video would later be shown to potential donors and that his task was to do
his best to persuade others to donate to the cause. Each persuader wrote down the name of the organization that he would support in his charity appeal. This step occurred before the manipulation to ensure that persuaders did not choose different causes based on the presence of an incentive. To avoid persuaders selecting causes that could potentially conflict with the values of target donors, persuaders were instructed not to select a religious or political organization. The persuader was then randomly assigned to either an Incentive or a No Incentive condition in the same manner as Study 1. All recruited participants who came to the lab consented to the videotape procedure, and nobody withdrew from the study at any point in time.

Next, each persuader was introduced to a condition- and hypothesis-blind video assistant in a separate room. Because the instruction assistant was aware of the condition assignment (Incentive vs. No Incentive), she was never present during the video recording task. To standardize the process across participants, the video assistant told each persuader, “When you are ready to begin, just tell me and I’ll start the recording”, and gave no further instruction. If a persuader asked for more guidance, the video assistant simply said, “Please just follow the instructions given to you at the beginning.”

After the persuader finished his charity appeal on videotape, he completed a short survey that asked how much effort he put into the appeal, how sympathetic he felt towards the cause, and how uncomfortable he felt making the appeal (all rated on 7-point scales). The survey also asked the persuaders to describe any personal connections he had to the organization he chose. Finally, the student was thanked and dismissed.

Phase two of the study consisted of a separate sample of 465 target donors (35.3% female; mean age = 30.1) who participated in an online survey via Amazon.com’s
Mechanical Turk in exchange for payment. The results from the first study were utilized to determine the necessary sample size of target donors to achieve sufficient power for the second study (see Appendix for details).

Each target donor was assigned to watch one recorded charity appeal, randomly assigned, which was embedded in an online survey. This resulted in five target donors watching each video from the first stage of the study. Target donors were given the same instructions as in Study 1.

After watching the appeal, target donors read that in addition to their standard participation fee of 50 cents, they would receive an additional 30 cents, which they could choose to keep or donate any portion to the cause advertised in the video. They were presented with a slider scale to indicate how much they would like to donate (from 0 cents to 30 cents). The payments used in this study reflect the standard compensation expectations of Amazon’s Mechanical Turk workers (Horton & Chilton, 2010).

Finally, target donors evaluated the persuader they viewed on a number of measures regarding their perceived sincerity, including “How sincere was this individual,” “How genuine was this individual,” “How much did the individual care about their cause,” “How deep is this individual’s commitment to their cause,” “How emotional was the individual,” and “How much feeling did the individual express” (averaged to form a six-item measure of perceived sincerity; \( \alpha = .94 \)). In addition, target donors evaluated how uncomfortable the persuader appeared using the following items: “How uncomfortable was the individual” and “How nervous was the individual” (averaged to form a two-item measure of perceived discomfort; \( r(465) = .78, p < .001 \)). All items were rated on seven-point scales.
Results

*Persuader-level analysis*

As in Study 1, persuader-level analyses consist of coding objective features of the videos. In addition, we analyzed persuaders’ responses to the post-video survey.

One condition- and hypothesis-blind research assistant coded each video in terms of length, and also whether the persuader spoke of a personal connection to the cause. There were no differences across condition in the length of the appeal ($M_{\text{incentive}} = 78.66$ seconds, $M_{\text{no incentive}} = 81.46$ seconds; $t(91) = .37, p = .71$), the proportion of persuaders who mentioned that they volunteered for the cause (incentive: 51%; no incentive: 44%; $\chi^2(1, N = 93) = 0.54, p = .46$), and the proportion who spoke about another personal connection, such as a loved one who had suffered from the misfortune that the cause seeks to alleviate (incentive: 21%; no incentive: 24%; $\chi^2(1, N = 93) = 0.09, p = .76$).

We next examined persuaders’ self-reported responses to the post-video survey. As expected by random assignment, there were no significant differences across condition in the proportion of persuaders who reported that they volunteered for the cause in the past (incentive: 57%; no incentive: 48%; $\chi^2(1, N = 93) = 0.86, p = .35$) or had another personal connection to the cause (incentive: 23%; no incentive: 33%; $\chi^2(1, N = 93) = 0.98, p = .32$). There were also no significant differences in how much effort the persuaders reported putting into their charity appeals ($M_{\text{incentive}} = 4.79, M_{\text{no incentive}} = 4.83$; $t(91) = -0.14, p = .89$), how sympathetic they felt towards their cause ($M_{\text{incentive}} = 6.32$, $M_{\text{no incentive}} = 6.41$; $t(91) = -0.51, p = .61$), and how uncomfortable they felt while making their charity appeals ($M_{\text{incentive}} = 3.81, M_{\text{no incentive}} = 3.89$; $t(91) = -0.25, p = .80$).
In sum, the persuader-level analyses suggest that the incentive manipulation did not affect many concrete aspects of the persuaders’ pitches such as the length of their appeal or whether they made reference to a personal connection to the cause. Moreover, it did not affect the persuaders’ self-assessment of their own effort, sympathy, or discomfort.

Target donor-level analysis

As in Study 1, target donor-level analyses consist of donation amounts from the second phase of the study. In addition, we analyze the judgments that target donors made about the persuader in the target donor survey (i.e., perceived sincerity and discomfort). All results were analyzed with a nested one-way ANOVA (i.e., hierarchical ANOVA) that compared the No Incentive condition to the Incentive condition while controlling for the groupings of persuaders nested within the main factor of incentive condition. Persuaders were treated as random effects.

Consistent with our key hypothesis, incentives to the persuader significantly reduced donation amounts ($F(1,372) = 11.53, p < .001, \eta^2_p = .030$). Participants donated less money when the persuader received an incentive for soliciting donations ($M = 8.45, SD = 10.07$) than when the persuader did not receive an incentive ($M = 11.95, SD = 11.95$), even though target donors were unaware of the existence of any incentive. Figure 2 displays the distribution of donations across the two conditions.

The above analysis was repeated for the six-item measure of perceived sincerity and the two-item measure of perceived discomfort. Results show that participants judged
the persuader to be less sincere when he received an incentive ($M = 4.71, SD = 1.37$) than when he did not receive an incentive ($M = 5.03, SD = 1.28; F(1,372) = 7.52, p < .01, \eta^2_p = .020$).

Further, and consistent with self-reports by the persuaders reported above, there were no differences across conditions in perceptions of discomfort ($M_{incentive} = 4.17$, $SD_{incentive} = 1.54; M_{no\;incentive} = 4.01, SD_{no\;incentive} = 1.55; F(1,372) = 1.57, p = .21, \eta^2_p = .004$). This suggests that incentivized persuaders were not simply feeling intimidated by the prospect of getting feedback or choking under pressure from trying too hard (an unlikely alternative explanation given the small stakes; see Ariely, Gneezy, Loewenstein, & Mazar, 2009).

**Mediation analysis**

We predicted that perceived sincerity would mediate the effect of incentive condition on donation amount. Using bootstrap analyses on the target donor-level data (Hayes, Preacher, & Myers, 2011; MacKinnon, Fairchild, & Fritz, 2007), we find that the 95% bias-corrected confidence interval for the size of the indirect effect excluded zero (Indirect Effect = -.85, $SE = .34; 95\% \; C.I. \; [-1.61, -.24]$), such that incentives decrease the perception that the persuader sincerely cares about a cause ($a = -0.32, p < .01$), which in turn decreases how much target donors give to their cause ($b = 2.66, p < .001$). Once we include perceived sincerity in the model, the relationship between incentives and donations becomes smaller but not insignificant ($c = -3.50, p = .001; c' = -2.65, p = .01$), suggesting partial mediation. When we include perceived discomfort in the model as an additional mediator, there is not a significant indirect effect of discomfort (Indirect Effect
= .02, SE = .07; 95% C.I. [-0.07, .29]), and the effect of perceived sincerity is unchanged (Indirect Effect = -.87, SE = .35; 95% C.I. [-1.60, -.24]).

Study 3: Fundraising with matching incentives

The goal of Study 3 was to replicate the findings and to examine one boundary condition. So far we have shown that incentives have a negative effect on perceived sincerity and donations. However, not all incentives signal selfishness. We expect that when an incentive does not contradict an individual’s pure motives for helping others, it will not hurt persuaders’ effectiveness. Therefore, we include a third condition representing a non-selfish, matching incentive. In addition, this study uses larger incentives and a greater range of possible donation amounts.

Method

The study followed similar procedures as Study 2, with exceptions as noted. In phase one, we recruited individuals in a Northeastern university behavioral lab who had signed up to participate in an hour-long lab session. Our goal was to encourage only people who were intrinsically motivated to help others to participate (i.e., those for whom we predict to be adversely impacted by a personal incentive). All attendees read an instruction sheet notifying them that we were “recruiting students who really care about a cause to participate in a study.” Participants could choose their favorite charity organization and have an opportunity to raise money for their cause. If they chose not to participate, they would be allowed to leave early from the lab session. Lab attendees
indicated their desire to participate by checking a “yes” or “no” box on the instruction sheet.

The target sample size was 120 students for this portion of the study (40 students per condition). After six weeks, we recruited 118 participants (58.5% female; approximately 9.8% of the study population).

Each participant (hereafter referred to as “persuader”) then met independently with a hypothesis-blind instruction assistant, who gave him the same instructions as in the previous study. In addition, before random assignment to condition, each persuader wrote down the name of the organization that he would advocate for in his appeal.

The persuader was then randomly assigned to condition in a three-group (Personal Incentive vs. Matching Incentive vs. No Incentive) between-subject design. As in the previous studies, persuaders in the No Incentive condition simply learned about the task. In the Personal Incentive condition, the persuader also read the following: “As a bonus, for every $10 that is donated to your charity organization, we will pay you an additional $10 for you to keep. In other words, the more money people donate to the cause from watching your charity appeal, the more money we will pay you.” Note that in this study, the potential reward for an effective charity appeal was larger than in the previous studies, both in terms of percentage of total money raised (10% in Studies 1 and 2 versus 100% in Study 3) and number of dollars mentioned as a reference point ($1 versus $10).

In the Matching Incentive condition, the persuader instead read the following: “As a bonus, for every $10 that is donated to your charity organization, we will “match” it by giving an additional $10 to the cause. In other words, the more money people donate to
the cause from watching your charity appeal, the more money we will give to that cause.” This incentive was designed to be identical to the *Personal Incentive* condition in terms of wording and incentive size. The only difference was whether the incentive would go to the individual making the appeal or to the cause. Again, no participants declined to participate in the study after learning about the incentives.

Next, each persuader recorded his charity pitch on videotape in a separate room. The video assistant, who was blind both to the hypothesis and to condition, gave the same video recording instructions as in Study 2. Finally, after the persuader finished his charity appeal, he completed the same short survey from the previous study and then was dismissed.

Before conducting phase two of the study, we excluded three videos from the analysis that were deemed unusable: one which was discovered to be a repeat participant already in the sample, and two which lasted over 6 minutes (over 5 standard deviations above the mean time spent on a charity appeal, and too long for our Mturk study timing). The rest of the videos ranged from 18-255 seconds. The authors were blind to condition when making this exclusion decision.

In phase two, we showed the remaining 115 videos to a separate sample of 861 target donors (38.0% female; mean age = 33.0) who participated in an online survey via Amazon.com’s Mechanical Turk in exchange for payment. Each target donor watched one recorded charity appeal, randomly assigned, which was embedded in an online survey. Therefore, 6-8 target donors watched each video.

After watching the appeal, target donors read that in addition to their standard participation fee of 50 cents, they would receive an additional dollar ($1), which they
could choose to keep or donate any portion to the cause advertised in the video. They were presented with a slider scale to indicate how much they would like to donate (from 0 cents to 100 cents). A $1 bonus is substantial in the Mturk environment; in addition, this bonus equaled 200% of their payment for participation in the task.

Finally, target donors evaluated the persuader they viewed on the same six-item measure of perceived sincerity ($\alpha = .94$) and two-item measure of perceived discomfort ($r(861) = .75, p < .001$) used in the previous study.

Results

_Persuader-level analysis_

As in the previous two studies, persuader-level analyses consist of coding objective features of the videos, as well as persuaders’ responses to the post-video survey.

A condition- and hypothesis-blind research assistant coded each video in terms of length, and also whether the persuader spoke of a personal connection to the cause. There were no differences across condition in the length of the appeal ($M_{\text{personal incentive}} = 69.79$ seconds, $M_{\text{no incentive}} = 69.29$ seconds, $M_{\text{matching incentive}} = 66.42$ seconds; $F(2,112) = .09, p = .92$), the proportion of persuaders who mentioned that they volunteered for the cause (personal incentive: 13%; no incentive: 26%, matching incentive: 16%; $\chi^2(2, N = 115) = 2.58, p = .28$), and the proportion who spoke about another personal connection, such as a loved one who had suffered from the misfortune that the cause seeks to alleviate (personal incentive: 31%; no incentive: 53%, matching incentive: 45%; $\chi^2(2, N = 115) = 3.87, p = .15$).
We next examined persuaders’ self-reported responses in the post-video survey. As expected by random assignment, there were no significant differences across condition in the proportion of persuaders who reported that they volunteered for the cause in the past (personal incentive: 26%; no incentive: 29%; matching incentive: 26%; $\chi^2(2, N = 115) = 0.12, p = .94$) or had another personal connection to the cause (personal incentive: 59%; no incentive: 58%; matching incentive: 55%; $\chi^2(1, N = 115) = 0.11, p = .94$). There were also no significant differences in how much effort the persuaders reported putting into their charity appeals ($M_{\text{personal incentive}} = 5.18, M_{\text{no incentive}} = 5.26, M_{\text{matching incentive}} = 5.53; F(2,112) = 1.21, p = .30$), how sympathetic they felt towards their cause ($M_{\text{personal incentive}} = 6.26, M_{\text{no incentive}} = 6.29, M_{\text{matching incentive}} = 6.61; F(2,112) = 1.88, p = .16$), and how uncomfortable they felt while making their charity appeal ($M_{\text{personal incentive}} = 4.03, M_{\text{no incentive}} = 3.66, M_{\text{matching incentive}} = 3.84; F(2,112) = .41, p = .66$).

As before, this analysis shows that the incentive did not affect many concrete aspects of the persuaders’ pitches, and it did not affect the persuaders’ self-assessment of their own effort, sympathy, or discomfort.

**Target donor-level analysis**

As in Study 2, target donor-level analyses consisted of donation amounts, as well as the judgments that target donors made about the persuader in the target donor survey. All results were analyzed with a nested one-way ANOVA (i.e., hierarchical ANOVA) that compared the three incentive conditions while controlling for the groupings of persuaders nested within the main factor of incentive condition. Persuaders were treated as random effects.
Consistent with our key hypothesis, there was an overall effect of incentives on donation amounts ($F(2,746) = 5.19, p < .01, \eta^2_p = .014$). Replicating findings from the previous studies, participants donated less money when the persuader received a personal incentive for soliciting donations ($M = 18.83, SD = 27.48$) than when the persuader did not receive an incentive ($M = 26.16, SD = 34.35$; $F(1,503) = 7.86, p < .01, \eta^2_p = .010$), even though target donors were unaware of the existence of any incentive. Importantly, the matching incentive ($M = 26.21, SD = 34.37$) did not differ from the no incentive condition ($F(1,492) = .00, p = .98, \eta^2_p = .00$), and did lead to greater donations than the personal incentive condition ($F(1,497) = 7.63, p < .01, \eta^2_p = .010$). Figure 3 displays the distribution of donations across the three conditions.

The above analysis was repeated for the six-item measure of perceived sincerity and the two-item measure of perceived discomfort. The overall effect of incentive on perceptions of sincerity was significant ($F(2,746) = 4.12, p = .02, \eta^2_p = .011$). Planned contrasts reveal that participants judged the persuader to be less sincere when he received a personal incentive ($M = 4.67, SD = 1.30$) than when he did not receive an incentive ($M = 4.97, SD = 1.30$; $F(1,503) = 8.15, p < .01, \eta^2_p = .011$), replicating findings from the previous studies. However, those who received a matching incentive were perceived as marginally more sincere ($M = 4.85, SD = 1.27$), than those who received a personal incentive ($F(1,497) = 2.79, p = .095, \eta^2_p = .004$) and similar to those who received no incentive ($F(1,492) = 1.35, p = .25, \eta^2_p = .002$).

Further, and consistent with self-reports by the persuaders reported above, there were no differences in perceptions of discomfort across conditions ($M_{\text{personal incentive}} = 4.18,$
$SD_{\text{personal incentive}} = 1.57; M_{\text{no incentive}} = 3.95, SD_{\text{no incentive}} = 1.51; M_{\text{matching incentive}} = 4.11, \quad SD_{\text{matching incentive}} = 1.66; F(2,746) = 2.00, p = .14, \eta_p^2 = .005$). Note that although the evidence herein suggests that the incompatibility between self-interest and altruism causes incentivized advocates to be less persuasive, this incompatibility does not seem to yield any feelings or displays of discomfort—at least that are detectable as measured.

**Mediation analysis**

Finally, we conducted a bootstrap analysis with 10,000 samples on the target donor-level data (Hayes, Preacher, & Myers, 2011; MacKinnon, Fairchild, & Fritz, 2007) using incentive condition as the independent variable, sincerity as the mediator, and donation as the dependent variable. Replicating the effects of Study 2, the 95% confidence interval for the comparison between *No Incentive* and *Personal Incentive* did not include zero, indicating that sincerity mediates the effect of incentives on donations (Indirect Effect = -2.16, $SE = .84; 95\% \text{ C.I. [-3.93, -.64]})$. Specifically, we found that incentives decrease the perception that the persuader sincerely cares about a cause ($a = -0.29, p < .01$), which in turn decreases how much target donors give to their cause ($b = 7.39, p < .001$). Once we include perceived sincerity in the model, the relationship between incentives and donations becomes smaller but not insignificant ($c = -7.33, p < .01; c' = -5.17, p = .04$), suggesting partial mediation. When we include perceived discomfort in the model as an additional mediator, there is not a significant indirect effect of discomfort (Indirect Effect = $.22, SE = .25; 95\% \text{ C.I. [-0.11, .98]})$, and the effect of perceived sincerity is unchanged (Indirect Effect = -2.26, $SE = .87; 95\% \text{ C.I. [-4.09, -.65]})$.  

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For the comparison between *Matching Incentive* and *Personal Incentive*, sincerity did not mediate the effect of incentive condition on donations (Indirect Effect = -1.40, $SE = .887; 95\% \text{ C.I. } [-3.16, .21]$). A closer examination of the pathways shows that this is because relative to a matching incentive, a personal incentive only marginally decreases the perception that the persuader sincerely cares about a cause ($a = -0.18, p = .098$). Nonetheless, decreased sincerity reduces how much target donors give to their cause ($b = 7.86, p < .001$), and once we include perceived sincerity in the model, the relationship between incentive condition and donations becomes smaller ($c = -7.38, p < .01; c' = -5.99, p = .02$).

**General Discussion**

Individuals oftentimes receive compensation for being spokespeople for causes, soliciting donations, or crafting persuasive messages for charity. The studies presented here attempt to capture what happens in such interpersonal persuasive contexts, whereby the success of an appeal relies on an individual’s ability to communicate pure intentions. We find that tainting intrinsically-motivated persuaders with a personal incentive reduces their persuasiveness: observers detect reduced sincerity and contribute less as a result.

These findings extend previous studies of crowding out, which focused on effort and examined tasks that did not involve skill. The task we employ is one for which little effort is involved—participants commit to the task prior to random assignment, have no time to prepare, and speak on video for a brief amount of time. Further, we find no
differences across conditions on self-reported effort or video time lengths. Instead, the success of the task depends on the ability to convey sincerity—a critical skill that is not captured in past research.

Although we find that target donors view incentivized persuaders as less sincere, it remains unclear if incentives actually make persuaders feel less empathic or if they are rendered less capable of communicating their concern. Interestingly, although target donors judged incentivized persuaders to be less sincere, the persuaders’ self-reports of sympathy did not differ across conditions; participants all reported extremely high levels of sympathy (means > 6 on a 7-point scale). However, their responses may reflect pre-established feelings, or participants may not want to indicate reduced sympathy for self-image or self-presentational reasons. This could also be an instance where observers have insight beyond what the actors themselves report (cf. Ekman, 1993; Vazire and Carlson 2012).

By demonstrating that personal incentives, but not matching incentives, harm persuasiveness, we provide evidence that the incompatibility of self-interest and altruism is necessary for the crowding out of sincerity to occur. Future research can explore additional boundary conditions, as has been done in the literature on incentives and motivation (Deci, Koestner, & Ryan, 1999; Eisenberger, Pierce, & Cameron, 1999; Gneezy, Meier, & Rey-Biel, 2011; Gneezy & Rustichini, 2000a/b; Heyman & Ariely, 2004). It is possible that other forms or sizes of incentives would not undermine sincerity in the same way (e.g., verbal rewards, Cameron, Banko, & Pierce, 2001; gifts, Shaffer & Arkes, 2009; large incentives; Imas, 2014).
In addition, though our research examines advocates for charitable causes, future research can identify other domains in which incentives negatively affect persuasiveness. Wherever a conflict of interest exists (e.g., doctors advocating treatment to patients, product endorsements), it may be the case that incentives diminish sincerity. However, advocating for prosocial causes is likely the most conspicuous conflict because of the direct incompatibility between altruism and self-interest.

In sum, we show how incentives can negatively affect people’s ability to advocate for a cause. Nonetheless, it is important to keep in mind that there can still be good reasons to pay for prosocial activities. They might engage people who would otherwise not help at all, and they may help recruit better talent within a competitive landscape (e.g., Ashraf, Bandiera, & Lee, 2015). Future research could examine the combined impact of these elements for a broader understanding of when incentives should be employed. Ultimately, it is important to recognize both the advantages and limits of incentives in a world where sincerity matters.
References


Figure 1: Distribution of donation amounts by persuader incentive condition in Study 1.
Figure 2: Distribution of donation amounts by persuader incentive condition in Study 2.
Figure 3: Distribution of donation amounts by persuader incentive condition in Study 3.
APPENDIX

APPENDIX A

ALTERNATIVE ANALYSIS USING MEAN AND MEDIAN RESPONSES FOR EACH PERSUADER

In the target donor-level analyses reported in the main text, a nested one-way ANOVA (i.e., hierarchical ANOVA) controlled for the groupings of persuaders nested within the main factor of incentive condition. Another way to analyze the data is to average the target donors’ responses (donation and perceived sincerity) for each persuader and then use these persuader-level averages as the units of analysis. This reduces the sample size to the number of persuaders (36 in Study 1; 93 in Study 2; 115 in Study 3). However, simple tests can be performed to compare the average between conditions for each measure.

In addition, because the number of donors comprising this persuader average is small (ranging from 5 to 8), any extreme responses will have a disproportionate effect on the mean. Therefore, we also perform the same persuader-level analysis examining the median response for each persuader.

Study 1

Effect on mean response for each persuader. An independent sample t-test revealed a significant effect of condition on donation amount ($t(34) = 3.08, p < .01$). The mean donation raised by each persuader was lower when the persuader received an
incentive for raising money ($M = .53, SD = .33$) than when the persuader did not receive an incentive ($M = .90, SD = .39$).

*Effect on median response for each persuader.* An independent sample t-test revealed a significant effect of condition on donation amount ($t(34) = 2.14, p = .04$). The median donation raised by each persuader was lower when the persuader received an incentive ($M = .13, SD = .33$) than when the persuader did not receive an incentive ($M = .47, SD = .60$).

*Study 2*

*Effects on mean responses for each persuader.* An independent sample t-test revealed a significant effect of condition on donation amount ($t(91) = 3.52, p = .001$). The mean donation raised by each persuader was lower when the persuader received an incentive ($M = 8.45, SD = 4.60$) than when the persuader did not receive an incentive ($M = 11.95, SD = 4.98$). T-tests also revealed significant effects on judgments of perceived sincerity ($t(91) = 2.21, p = .03$), such that the mean sincerity judgment for each persuader was lower when the persuader received an incentive ($M = 4.71, SD = .65$) than when he did not receive an incentive ($M = 5.03, SD = .75$).

*Effects on median responses for each persuader.* An independent sample t-test revealed a marginally significant effect of condition on donation amount ($t(91) = 1.79, p = .08$). The median donation raised by each persuader was lower when the persuader received an incentive ($M = 6.70, SD = 6.76$) than when the persuader did not receive an incentive ($M = 9.72, SD = 9.35$). T-tests also revealed marginally significant effects on judgments of perceived sincerity ($t(91) = 1.66, p = .10$), such that the median sincerity
judgment for each persuader was lower when the persuader received an incentive ($M = 4.88, SD = .82$) than when he did not ($M = 5.15, SD = .76$).

**Study 3**

*Effects on mean responses for each persuader.* A one-way ANOVA revealed a significant effect of incentive condition on donations ($F(2,112) = 4.12, p = .02$). The mean donation raised by each persuader was lower when the persuader received a personal incentive ($M = 18.86, SD = 8.99$) than when the persuader did not receive an incentive ($M = 26.24, SD = 13.74; t(76) = 2.49, p = .01$) and when the persuader received a matching incentive ($M = 26.17, SD = 15.50; t(75) = 2.47, p = .02$). There was no difference in donations between persuaders who did not receive an incentive and those who received a matching incentive ($t(76) = .02, p = .98$).

A one-way ANOVA did not reveal a significant effect of incentive condition on perceived sincerity ($F(2,112) = 1.96, p = .15$). However, planned contrasts revealed that the mean sincerity judgment for each persuader was lower when the persuader received a personal incentive ($M = 4.68, SD = .62$) than when he did not receive an incentive ($M = 4.97, SD = .65; t(76) = 1.97, p = .05$) and directionally lower than when the persuader received a matching incentive ($M = 4.85, SD = .64; t(75) = 1.16, p = .25$). There was no difference in perceived sincerity between persuaders who received no incentive and those who received a matching incentive ($t(76) = .81, p = .42$).

*Effect on median responses for each persuader.* A one-way ANOVA revealed a marginally significant effect of incentive condition on median donations ($F(2,112) = 2.76, p = .07$). The median donation raised by each persuader was lower when he
received a personal incentive ($M = 8.37, SD = 10.77$) than when the persuader did not receive an incentive ($M = 15.32, SD = 16.91; t(76) = 1.77, p = .08$) and significantly lower than when the persuader received a matching incentive ($M = 17.03, SD = 22.07; t(75) = 2.21, p = .03$). There was no difference in donations between persuaders who did not receive an incentive and those who received a matching incentive ($t(76) = .43, p = .67$).

A one-way ANOVA revealed a marginally significant effect of incentive condition on perceived sincerity ($F(2,112) = 2.53, p = .08$). Planned contrasts revealed that the median sincerity judgment for each persuader was lower when the persuader received an incentive ($M = 4.76, SD = .11$) than when he did not receive an incentive ($M = 5.09, SD = .12; t(76) = 2.07, p = .04$) and marginally lower than when he received a matching incentive ($M = 5.04, SD = .12; t(75) = 1.78, p = .08$). There was no difference in rated sincerity between persuaders who received no incentive and those who received a matching incentive ($t(76) = .28, p = .78$).
APPENDIX B

NONPARAMETRIC ANALYSIS

Donation data are usually not normally distributed (see Small, Loewenstein, & Slovic, 2007 for example). A Kolmogorov-Smirnov test rejected the null hypothesis that averaged persuader-level donations were normally distributed in Study 1 \((p < .01)\) and Study 3 \((p < .01)\), but not in Study 2 \((p = .20)\). In addition, in Study 3, the Levene’s homogeneity of variance test rejects the null hypothesis that the variances are equal across the three groups \((F(2, 112) = 7.36, p < .001)\). The Levene’s test did not reject the null hypothesis in Studies 1 and 2 \((Study 1: F(1, 34) = .61, p = .44; Study 2: F(1, 91) = .001, p = .98)\). For robustness, we report nonparametric tests of the effects of incentive condition on donations utilizing the mean donation for each persuader.

Study 1

Nonparametric Mann-Whitney U tests revealed results consistent with the parametric tests reported in the main manuscript \((U = 250, z = 2.82, p < .01)\).

Study 2

The Mann-Whitney tests find results consistent with the parametric test reported in the main manuscript \((U = 1497, z = 3.20, p < .001)\).

Study 3

Because this study contained three conditions, we conducted a nonparametric Kruskal-Wallis test, which extends the Mann-Whitney test reported in the previous
studies to designs with more than two groups. This test finds the same result as the parametric test reported in the main manuscript ($H(2) = 6.44, p = .040$). Participants donated less money when the persuader received a personal incentive for soliciting donations than when the persuader did not receive an incentive ($H = 18.15, p = .02$) and when the persuader received a matching incentive ($H = 14.64, p = .05$). The matching incentive led to similar donations as no incentive ($H = 3.51, p = .65$).
APPENDIX C

POWER ANALYSIS

The results from Study 1 were utilized to determine the necessary sample size to achieve sufficient power for Study 2. A nested ANOVA revealed that incentives significantly affected donation amounts ($F(1,207) = 6.50, p = .01, \eta^2_p = .030; \text{Cohen's } d = .34$). Target donors donated less money when viewing a video appeal made by a volunteer who had received an incentive ($M = $0.52, $SD = $0.88) than by a volunteer who had not received an incentive ($M = $0.87, $SD = $1.15). The power analysis results estimated a sample size of 441 participants to achieve 80% power for a nested ANOVA (Cohen’s $d = 0.3; \alpha = .05; 1 - \beta = .80$). Thus, for Study 2, we recruited 465 target donors, or 5 target donors for each of the 93 videos in phase one.

Similarly, the results from Study 2 were used to determine the sample size for Study 3 (given the similar student population sample). In Study 2, a nested ANOVA revealed that incentives significantly affected donation amounts ($F(1,372) = 11.53, p < .001, \eta^2_p = .030; \text{Cohen's } d = .32$). Participants donated less money when the persuader received an incentive for soliciting donations ($M = 8.45, \text{SD} = 10.07$) than when the persuader did not receive an incentive ($M = 11.95, \text{SD} = 11.95$). The power analysis results estimated a sample size of 638 participants to achieve 80% power for a nested ANOVA (Cohen’s $d = 0.3; \alpha = .05; 1 - \beta = .80$). Because we did not fully reach our target sample size in phase one, we oversampled in phase two by recruiting 861 target donors, or approximately 7 target donors for each of the 115 videos.