



Self-effects and public commitment on social media: Testing the cognitive and social influences of sending messages on message senders

Zijian Lew^{a,*}, Andrew J. Flanagin^b

^a Wee Kim Wee School of Communication and Information, Nanyang Technological University, Singapore

^b Department of Communication, University of California, Santa Barbara, Santa Barbara, CA, USA

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ABSTRACT

Through a self-effects perspective, this research investigates how people's perceptions of their memories are influenced by sharing those memories on social media. Referencing the bidirectional message effects model and identity shift theory, relevant psychological factors and social media affordances were identified and tested across two studies. Results from Study 1 showed that the self-relevance of an experience and people's engagement during the experience predicted greater perceived memory vividness and/or recalled enjoyment of the experience. Across both studies, mediation models elucidated the importance of "public commitment" in self-effects: Publicly sharing a message engendered greater presumed close audience knowledge, which led to greater commitment, and resulted in greater perceived memory vividness. However, publicly sharing a message did not directly engender greater commitment. Thus, people are not committed *due to* the public nature of a statement they made, but rather, are committed *to* a specific subgroup within the public: their close ties.

Whereas communication research has traditionally focused on the effects of messages on audiences, a relatively newer line of research—termed *self-effects*—investigates the effects of sending messages on the message senders themselves (e.g., Pingree, 2007; Valkenburg, 2017). Self-effects are particularly relevant to social media, where ordinary individuals can send messages or make self-presentations to influence not only other people, but also themselves. According to a Pew Research Center survey, 83% of US adults have used YouTube, 68% have used Facebook, and 47% have used Instagram, as part of a trend that has risen over the last decade (Gottfried, 2024). As such, understanding how people may influence themselves due to what they say online is both theoretically important and socially relevant.

Among the various theoretical approaches to self-effects, two stand out for their contemporary relevance: the bidirectional message effects model (Pingree, 2007) and identity shift theory (Carr et al., 2021). Pingree's bidirectional message effects model is unique for expounding the psychological processes that occur prior to, during, and after the sending of messages. Carr et al.'s identity shift theory is novel in the specification of various digital affordances—such as publicness, persistence, feedback, and identifiability—that facilitate identity change based on people's online self-presentations. Although these two theories were developed separately, integrating certain elements from each

theory can provide a more holistic understanding of self-effects on social media—something that the present research aims to do.

As social media increasingly become common platforms for people to store and share personal memories (Van House, 2011), it is worth investigating how social media complement people's memories by serving as tools to document their experiences. Sharing photographs, in particular, has become a major activity on social media. For example, sharing vacation photos on social media has become almost an integral part of a vacation *per se* (Munar & Jacobsen, 2014), and even sharing photos of quotidian activities has become a regular part of daily life for some people (Bayer et al., 2016). Yet, the evidence regarding the self-effects of photo taking/sharing is mixed, especially where memory and enjoyment are concerned. One study found that taking photos weakens people's memory of the photographed objects (Henkel, 2014, Experiment 1), but another study found the opposite: taking photos improves memory (Barasch et al., 2017). Separately, a study found that taking photos, in itself, can increase enjoyment (Diehl et al., 2016), but other studies found that taking photos or not does not influence enjoyment at all (Tamir et al., 2018, Studies 2 and 3). The present research does not attempt to resolve all these discrepancies, but rather, attempts to broaden the perspective by integrating elements from the bidirectional message effects model (Pingree, 2007) with those from identity

* Corresponding author.

E-mail addresses: zlew@ntu.edu.sg (Z. Lew), flanagin@ucsb.edu (A.J. Flanagin).

shift theory (Carr et al., 2021). These theories speak to sending messages in general (vs. focus narrowly on taking/sharing photos) and importantly they contain both cognitive and social dimensions (see Stone & Zwolinski, 2022), thus enabling a more holistic view of this domain.

The present research, therefore, explores the ways in which the sharing of personal experiences on social media engenders self-effects by influencing people's *perceived memory vividness* and/or *enjoyment* of shared experiences. Unlike other naturalistic studies that examined memory accuracy (e.g., Wang et al., 2017), this research elected to examine a subjective assessment of one's own memory—perceived memory vividness—because biased self-presentations via textual descriptions or the editing of photos can blur the boundaries of what is accurate or not (Tversky & Marsh, 2000; Walther & Lew, 2022). Perceived memory vividness and enjoyment were predicted to be influenced by several factors prior to message release (self-relevance of activity, engagement during activity, editing of photos) and several technological factors after message release (publicness and ephemerality of social media posts). Results show, among other things, that people are most committed to what they say on social media when they presume their close ties are aware of their social media posts.

1. Bidirectional message effects model

The bidirectional message effects model (Pingree, 2007) categorizes the entire process of message sending into three stages: expected expression effects, composition effects, and message release effects.

Expected expression effects deal with what people focus their attention on when they are preparing to send a message (Pingree, 2007). To the extent that a social media post is a form of self-presentation, message senders may be more *engaged* with—and better remember—things that have greater *self-relevance* as they prepare to send a message (see Vansteenkiste et al., 2018). Additionally, research on cognitive tuning shows that information was represented with greater specificity in the minds of people who anticipated sending messages than people who anticipated receiving messages (Zajonc, 1960). Research on audience tuning also shows that when people learn equivocal (can be viewed as positive or negative) information on a subject, they convey that information according to whether they expect their audiences to have positive or negative opinions on the subject (Echterhoff, Lang, et al., 2009). Thus, people process and express information differently depending on their expectations, commensurate with the argument that expected expression effects are crucial to understanding self-effects.

Composition effects are the effects associated with fully articulating a thought (Pingree, 2007). As people do not store complete sentences in their memory, putting a thought into words involves (re)construction that may alter the thought itself via the growth of new ideas or if logical weaknesses are found. Going beyond text and words, it is plausible that *editing* photos when composing a message intended for social media can influence message senders in similar ways.

Message release effects are consequences following the sending of messages, brought about due to the social implications of what was sent (Pingree, 2007). In other words, they are the results of making a public statement to others, such as when people become more committed to a self-presentation upon its public expression.

In Stone and Zwolinski's (2022) theorizing on the effects of sharing photos online, they highlighted two aspects antecedent to posting on social media that have substantial bearing on people's memories: capturing photos and manipulating (i.e., editing) photos. A parallel can be found in the first two stages of the bidirectional message effects model: expected expression effects and composition effects. The present research identified two factors related to capturing photos that have theoretical bearing on expected expression effects—self-relevance and engagement—and one factor important to composition effects—editing. Message release effects will be integrated with identity shift theory and explained in detail later.

1.1. Self-relevance

For the present purposes, *self-relevance* is the extent to which an activity or experience is personally important to the individual who shared it in a social media post. Across various non-digital contexts, research on cognition has demonstrated that highly self-relevant information is better remembered than information that is less self-relevant (Forsyth & Wiberly, 1993; Trafimow & Wyer, 1993).

Within a social media context (specifically, a photo-taking task), however, evidence for the effect of self-relevance on people's memory is mixed. In one within-subjects experiment by Soares and Storm (2018), participants were shown 15 paintings on a monitor, one by one. In a camera condition, participants took photos of the paintings, which were saved on a phone. In a Snapchat condition, participants took photos of the paintings using the Snapchat app, and sent the snaps to the researcher, so the photos were not saved on the phone. For the observe condition, participants observed the paintings without taking any photos. Finally, participants were given a multiple-choice memory quiz. Results showed that memory in the observe condition was superior to both the Snapchat and camera conditions. However, the participants did not have the freedom to choose what they wanted to photograph, and therefore may have been taking photos of paintings with little self-relevance.

In contrast, across four experiments by Barasch et al. (2017), participants visited a museum (some real, some virtual) and either used a camera to take photos or did not take photos, among other conditions. Importantly, participants selected which artworks to photograph. After the museum tour, participants were given a visual recognition test. In all four experiments, participants consistently performed better in the visual recognition test in the photo condition than in the no-photo condition. Barasch et al. (2017) reasoned that "people in fact take photos in order to engage with and remember those experiences that are self-relevant," and that their results "demonstrate a process in which photo taking improves visual memory by directing attention to photo-worthy aspects of experiences" (p. 1065).

Perhaps the discrepancies between Soares and Storm's (2018) studies and Barasch et al.'s (2017) studies can be explained by self-relevance, instead of any of the experimental manipulations in those studies. Self-relevance may be much higher for participants in Barasch et al.'s (2017) studies (who had autonomy to select what to photograph) than for participants in Soares and Storm's (2018) studies (who lacked autonomy in selecting what to photograph), leading to superior memory in the former than in the latter. Autonomy allows people to act on tasks based on their own motivations (Deci & Ryan, 2012), which are influenced by a variety of personally-significant factors, including personal values, aspirations, and self-relevance (Vansteenkiste et al., 2018). Therefore:

H1. Self-relevance is positively associated with perceived memory vividness.

What is less clear is the relationship between self-relevance and enjoyment. In Bhattacharjee and Mogilner's (2014) research (Studies 3A and 3B), recalling extraordinary experiences was found to engender greater enjoyment than recalling ordinary experiences, because the former are more likely to have autobiographical, self-defining qualities than the latter. This suggests that the self-relevance of experiences should be positively correlated with enjoyment, although the threshold level of self-relevance for this effect to occur seems high. Yet, even taking photos of prosaic dining experiences can engender greater enjoyment than not taking photos (Diehl et al., 2016, Study 2), suggesting that self-relevance may be unrelated to enjoyment. Therefore:

RQ1. Is self-relevance associated with enjoyment?

1.2. Engagement

Engagement is the extent to which one's attention is immersed in a task or, conversely, the absence of mind-wandering (Tamir et al., 2018). Greater engagement should also lead to better memory by dint of improved encoding, where digital technology is concerned or otherwise. For example, Henkel (2014, Experiment 2) found that participants had superior memory of objects they photographed when they zoomed into a specific part of the object than when they did not zoom. Zooming may have led participants to focus their attention on the photographed objects, thereby increasing engagement, preventing memory impairment, or enhancing memory encoding relative to not zooming. In contrast, if people take photos without zooming, operating the camera could disrupt people's engagement with the photographed objects, leading to poorer memory than if people did not take photos at all (Henkel, 2014, Experiment 1; Soares & Storm, 2018).

Other than memory, engagement can also influence enjoyment. Engagement is often theorized as one of several crucial ingredients in positive psychology, as a contributor to well-being but also something that is pursued for its own sake (Csikszentmihalyi, 2014; Seligman, 2011). A study by Killingsworth and Gilbert (2010) found that people were less happy when their minds wandered (that is, when they lacked engagement) to something other than the activity they were doing than when their minds did not wander. A series of lab and field studies by Diehl et al. (2016) also found that taking (vs. not taking) photographs increased overall enjoyment, and that engagement mediated the relationship between photo-taking and enjoyment. These photo-taking effects were robust across a variety of contexts from the relatively novel like going on a city bus tour of Philadelphia to the more mundane like dining at a restaurant.

Therefore, not only can taking photos of an experience enhance engagement, but engagement—in itself—can positively influence memory and enjoyment:

H2. Engagement is positively associated with (a) perceived memory vividness and (b) enjoyment.

1.3. Editing

People are often motivated to manage the impressions that others have of them (Leary & Kowalski, 1990), and may therefore make edits to optimize their self-presentations. Before people post on social media, for instance, they may choose to edit the photos/videos or add text/captions. Edits can range from the minor, such as cropping and adjusting contrasts, to the major that substantively alter the presented reality.

When people edit images that represent themselves, they can end up influencing their cognitions about themselves (Stone & Zwolinski, 2022). A study by Wu et al. (2021) found that people who used apps to edit their own faces onto the bodies of celebrities developed higher self-esteem regarding their physical appearance, because their edits allowed them to visualize how they may look more attractive. Separately, Walther and Lew (2022) theorized that editing/customizing one's digital avatar allows individuals to explore their ideal selves (see Higgins, 1987), and people may internalize the edits they make, which can result in identity shift. Applying this reasoning to the editing of photographs that people use to self-present, it is possible that because the photos (which may or may not contain faces) represent or send signals about a message sender, people who edit their photos to a greater extent before sharing them on social media have more vivid¹ memories of the photographed experiences.

H3. Editing is positively associated with perceived memory vividness.

It is less certain, however, whether the increased cognitive

involvement due to editing can influence one's perceived enjoyment of the experience:

RQ2. Is editing associated with enjoyment?

1.4. Message release effects

In an earlier section, the process of audience tuning was explained to describe how message senders, after acquiring equivocal information about a target, tweaked their expressions of that information to become unequivocal and aligned with the (positive or negative) interpretation they expect audiences to prefer (Echterhoff, Lang, et al., 2009). The same line of research shows that after expressing an audience-tuned message, message senders can internalize what they said (Echterhoff, Higgins, et al., 2009). More precisely, when message senders were tasked to recall what they originally learned about the target, they recalled not the equivocal information (which was the more accurate answer), but the unequivocal positive/negative version of the information that they expressed to audiences (Echterhoff, Higgins, et al., 2009). This was termed the saying-is-believing effect, and it demonstrates one way by which releasing a message can engender self-effects.

At the message release stage, the *publicness* of social media, in particular, is crucial to understanding why self-effects may be more potent on social media. It “offers message senders the ability to articulate self-related messages to any size and nature of audiences” (Valkenburg, 2017, p. 482), potentially creating a stronger sense of commitment, and therefore stronger self-effects, than if messages were sent to smaller audiences, face-to-face. But the potential for publicness to engender greater commitment may rest on the assumption that messages are persistent, that is, they remain accessible and unchanged (Evans et al., 2017). If messages were *ephemeral*, and thus disappear after a fixed amount of time (Bayer et al., 2016), the effects of publicness may be mitigated. The disappearance of ephemeral social media posts restricts the size of the audience and potentially releases message senders from their commitment to what they previously posted. Put differently, message ephemerality may moderate the influence of publicness on memory and enjoyment.

As identity shift theory prominently features publicness in a central role (and ephemerality in a more speculative role), it will be used to illuminate the influence of these two factors on self-effects.

2. Identity shift theory

Identity shift refers to changes in the way people perceive themselves as a consequence of making online self-presentations (Carr et al., 2021). In the original identity shift study, people who drew upon their past experiences to self-present as extroverted or introverted subsequently self-reported as feeling more extroverted or introverted respectively, but only if their self-presentations were public and not private (Gonzales & Hancock, 2008; see also Tice, 1992). Another study by Carr and Hayes (2019) found that people who publicly portrayed themselves as Starbucks fans on an online chat platform reported greater identification with the brand than people who privately portrayed themselves as Starbucks fans. In other words, people internalize their online self-presentations—even if it is only for a while.

Related research in this domain has extended identity shift theory, demonstrating that message senders need to be identifiable (vs. anonymous) for identity shift to occur (Carr & Hayes, 2019; Carr et al., 2021). Furthermore, confirmatory feedback magnifies the extent to which people internalize their online self-presentations (Carr & Foreman, 2016; Walther et al., 2011).

2.1. Publicness

Among the various factors that facilitate identity shift, *publicness* stands out for making people committed, or beholden, to their self-

¹ But not necessarily accurate.

presentations (Carr et al., 2021). As Schlenker (1986) argued, “public as compared to private behavior is more committing, in that it is more difficult to revoke, implies that the actor will behave commensurately in the future, and implies that he or she has behaved similarly in the past” (pp. 26–27). In other words, publicness is important to self-effects as public behavior warrants more commitment than private behavior.

Therefore, identity shift occurs when people publicly send messages (as opposed to privately articulating the same message), become committed to what they have said, and subsequently alter their personalities, behaviors, and/or attitudes to follow suit. Extending this reasoning to the present context of sharing personal experiences on social media, photos posted publicly on social media are arguably better remembered than photos stored privately on a phone—after all, one cannot commit to something that one does not remember. As such:

H4. People who publicly share an experience have greater perceived memory vividness than people who keep an experience private.

H5. The relationship between publicness and perceived memory vividness (described in H4) is mediated by commitment.

The relationship between publicness and enjoyment is less clear. According to capitalization research (Langston, 1994), people can maximize the benefits of positive experiences by publicly sharing them with others, leading people to perceive positive experiences as even more positive after the retelling. However, public sharing can lead to negative outcomes if self-presentational concerns become a source of anxiety. In studies by Barasch et al. (2018), taking photos with the intention to share publicly resulted in less enjoyment than taking photos with the intention of keeping them privately for oneself. Thus:

RQ3. Do people who publicly share an experience have greater enjoyment than people who keep an experience private?

2.2. Ephemerality

Ephemerality is important because it is a potential boundary condition for the effects of publicness. According to Carr et al. (2021), “exposure to and reflection on one’s own self-presentation is seen as an essential part of the self-persuasion underpinning identity shift,” but ephemeral media that disappear after 24 h or after a viewing “can make self-presentations appear temporary and inconsequential to the sender, not giving senders time to be exposed and reflect on their self-presentations [and] may not afford or encourage the degree of editing and deliberation seen in persistent channels” (p. 206). That is, ephemerality can weaken self-effects.

Some evidence suggests that ephemerality potentially releases people from—and therefore potentially negates the effects of—public commitment. Qualitative interviews have found that people claim they can afford to be less careful about what they post on Snapchat precisely because others cannot hold them accountable for what was previously said (Bayer et al., 2016; Xu et al., 2016). If ephemerality releases people from public commitment, then the cognitive effort required to commit to what was said should also decrease. Therefore:

H6. The relationship between publicness and perceived memory vividness is moderated by media ephemerality, such that people who publicly share an experience have greater perceived memory vividness than people who keep an experience private, but only if the medium is persistent and not ephemeral.

Following RQ3, the relationship between ephemerality and enjoyment is ambiguous:

RQ4. Is the relationship between publicness and enjoyment moderated by media ephemerality?

2.3. Presumed close audience knowledge

Despite consistent theorizing that public behavior fosters commitment, extant research has not always explicated in depth what constitutes “public” when discussing public behavior. Early operationalizations of public behavior defined it entirely in contrast to private behavior, in that as long as even one other person had the potential to witness one’s self-presentation, the self-presentation was considered public (e.g., Kelly & Rodriguez, 2006; Tice, 1992). In studies by Tice (1992), participants in the public condition were led to believe that a single graduate student, whose identity was unknown to the participant, was observing the participant through a one-way mirror, while participants in the private condition were not observed. In Gonzales and Hancock’s (2008) study, participants in the public condition were told to make text-based self-presentations that would be posted on a public blog, while participants in the private condition were told to make self-presentations on a text document. There was evidence for public commitment—public behaviors had greater effect on people’s identities than private behaviors—in both Tice (1992) as well as Gonzales and Hancock (2008), suggesting that (a) “public” can be just one unknown observer in Tice’s studies or that (b) “public” can really refer to public accessibility in Gonzales and Hancock’s study. Marwick and Boyd (2011) even asserted that “bloggers write for a ‘cognitively constructed’ audience, an imagined group of readers who may not actually read the blog” (p. 116). This argument that can be extended to other social media platforms, such that (c) “public” can mean an imagined audience.

Yet, the most potent self-effects may be best engendered by a fourth category of what constitutes “public:” close ties. Close ties are the people—typically family and close friends—whom one is emotionally close to (Ellison et al., 2007). In one identity shift study, participants who publicly self-portrayed as extroverted or introverted reported that they felt more extroverted or introverted, respectively, after receiving affirmative feedback from close ties than affirmative feedback from non-close ties (Carr & Foreman, 2016). The present research extends this idea to ask whether the *presumption* that close ties will know of one’s social media post is sufficient to induce self-effects, without having any actual feedback from close ties.

To this end, the concept of *presumed close audience knowledge* was introduced in the present study to represent the extent to which message senders assume that their close ties will know of their posts—as a complementary predictor to publicness. Put differently, what fosters greater perceived memory vividness or enjoyment may not be the technological affordance of publicness but the psychological perception of presumed close audience knowledge. Therefore, building on H4 and RQ3 respectively.

H7. Presumed close audience knowledge is positively associated with perceived memory vividness.

RQ5. Is presumed close audience knowledge associated with enjoyment?

3. Study 1

Study 1 was a naturalistic quasi-experiment with a 2 (publicness: public/private) × 2 (ephemerality: persistent/ephemeral) between-subjects design. Participants were assigned to a condition using partial randomization, and had to take three photos while engaged in an activity that was part of their daily lives. They then executed condition-specific instructions to post their photos in public or keep the photos private, and to do so in a persistent or ephemeral way.

3.1. Sample

Participants were UC Santa Barbara undergraduates who, as a qualifying criterion, posted at least three photo/video posts about their

personal experiences (i.e., not memes or news stories) on either Snapchat or Instagram in the four weeks preceding the study. Participants were rewarded with course credit for their efforts.

Power analyses based on an estimated small-to-medium effect size ($f^2 = 0.085$) showed that 176 participants were required to have .80 power for the linear regression analysis needed for hypothesis testing (described later). After removing participants ($n = 55$) who failed either of two attention check questions (e.g., “Select disagree if you are paying attention”), a total of $N = 163$ participants (power = .76)² were retained for analyses.

The majority of participants were female (73.6%; male = 24.5%; other/prefer not to say = 1.8%). Their ages ranged from 18 to 38 years old ($M = 19.93$, $SD = 2.23$). White participants comprised 36.8% of the sample, Asian participants 31.9%, Hispanic or Latino/a participants 9.2%, Black or African American participants 2.5%, Native Hawaiian or Pacific Islander 1.2%; others indicated mixed ethnicity.

3.2. Procedure

Potential participants completed a screener, which asked whether they posted at least three personal experiences in photo or video form in the last four weeks, and whether they used Snapchat/Instagram Stories/Instagram posts at least once a month. People who answered “no” to the first question were not allowed to participate. The latter three questions affected the randomization possibilities for the ephemerality condition: people who used Instagram posts (49.4%) can be placed into the persistent condition, and people who used Snapchat (78.0%) or Instagram Stories (73.9%) can be placed into the ephemeral condition.³

All participants were told to take three photos of a solo activity the next time they left their home, and to “make their photos interesting.” Depending on the condition they were placed in, they were then given additional instructions regarding which app to post the three photos on. Those in the public + ephemeral condition ($n = 55$) were told to post on either Snapchat or Instagram Stories; those in the public + persistent condition ($n = 24$)⁴ were told to post on Instagram (not Instagram Stories); those in the private + ephemeral condition ($n = 59$) were told to craft a post on either Snapchat or Instagram Stories, but to save the “post” as screenshots instead of actually posting; and those in the private + persistent condition ($n = 25$) were told to craft a post on Instagram (not Instagram Stories), but to save the “post” as screenshots instead of actually posting. All instructions were emailed to participants’

² The study was held during the COVID-19 pandemic, when no in-person classes or activities were allowed on the university campus. Additional participants were not recruited after the university reopened to ensure that the context was consistent throughout the study.

³ The procedure for assignment to conditions was as follows: Participants were asked whether they send messages via each of the following: Instagram posts, Instagram Stories, and Snapchat. Two variables were created on Qualtrics for assigning participants to conditions: “persistent” and “ephemeral.” Each variable took on one of two possible values: “yes” and “no.” Participants who use Instagram posts were assigned to “persistent: yes” and participants who do not use Instagram posts were assigned to “persistent: no.” Participants who use either Snapchat or Instagram Stories were assigned to “ephemeral: yes.” Participants who use neither Snapchat nor Instagram Stories were assigned to “ephemeral: no.” Participants categorized under both “persistent: yes” and “ephemeral: yes” were placed in a randomizer that could assign them to all four conditions (i.e., public + ephemeral, public + persistent, private + ephemeral, private + persistent). Participants categorized under “persistent: yes” and “ephemeral: no” were placed in a randomizer that could assign them only to the public + persistent and the private + persistent conditions. Participants categorized under “persistent: no” and “ephemeral: yes” were placed in a randomizer that could assign them only to the public + ephemeral and the private + ephemeral conditions. People categorized under “persistent: no” and “ephemeral: no” were ineligible to participate.

⁴ The unequal cell sizes were due to unequal reported use of persistent media and ephemeral media.

university email accounts so that they could refer to the instructions when they needed to. After participants took their photos, they either published their posts (public conditions) or crafted their posts and took screenshots (private conditions). Following that, they clicked the link in the emailed instructions to complete a questionnaire to evaluate their experience as a whole (i.e., the photos were assessed collectively). See the Online Supplemental Materials for the full instructions.

3.3. Measures

Self-relevance ($M = 4.89$, $SD = 1.67$) was an original measure that asked participants, “Think of the activity that is captured in your post [‘photos’ in private conditions]. How important is the activity to you personally?” Responses were rated on a scale of 1 (*not important at all*) to 7 (*extremely important*).

Engagement ($M = 3.12$, $SD = 1.55$) was measured using the question stem, “During the photo-taking activity:” followed by two items inspired by Tamir et al. (2018): “My mind wandered often” and “I was distracted by other things,” Pearson’s $r = .55$, $p < .001$. Responses were scored from 1 (*strongly disagree*) to 7 (*strongly agree*) and were reverse-coded. Therefore, the construct of engagement can also be interpreted as the absence of mind-wandering.

Editing ($M = 2.40$, $SD = 1.54$) was an original measure, explained to participants as such: “Editing is defined as work done to convert a raw image to a processed social media post, including but not limited to: cropping, adjusting lighting/colors (including adding filters), writing captions, and tagging people.” Participants were then told to rate the following statements from 1 (*very little*) to 7 (*a lot*): “How much editing work did you do to the contents of the photos,” “How much time did you spend editing the contents of the photos,” and “How much effort did you put into editing the contents of the photos?” Cronbach’s $\alpha = .93$.

Commitment ($M = 4.76$, $SD = 1.23$) was measured using three semantic differential questions created for this study. The questions were: “Compared to the way you portrayed yourself in your photos, how committed are you to maintaining this image of yourself in the future? (1 = *very uncommitted*, 7 = *very committed*),” “Compared to the way you portrayed yourself in your photos, how consistent with this portrayal do you think you will be in your future self-portrayals? (1 = *very inconsistent*, 7 = *very consistent*),” and “Compared to the way you portrayed yourself in your photos, how differently would you portray yourself in the future? (1 = *very differently*, 7 = *very similarly*.)” Cronbach’s $\alpha = .77$.

Presumed close audience knowledge ($M = 4.80$, $SD = 1.39$) was an original scale with three items. Participants were told that “close others” refers to friends and family whom they are close to, before rating the following statements from 1 (*strongly disagree*) to 7 (*strongly agree*): “Close others may know what I posted [what photos I took],” “Close others may remember what I posted [what photos I took],” and “Close others may be able to recall what I posted [what photos I took].” Phrases *not* in square brackets were used in the public conditions; phrases in square brackets were used in the private conditions. Cronbach’s $\alpha = .86$.

Perceived memory vividness ($M = 6.12$, $SD = 0.93$) was measured using a subset of items from Johnson et al.’s (1988) Memory Characteristics Questionnaire. The question stem read, “Assess your current memory of the activity shown in your post [‘photos’ in private conditions].” It contained six semantic differential items: very sketchy–very detailed, very vague–very vivid, very dim–very sharp, very murky–very clear, very incomplete–very complete, and very inaccurate–very accurate. The items were scored on a 7-point scale, Cronbach’s $\alpha = .92$.

Enjoyment ($M = 6.01$, $SD = 1.02$) was assessed with a question stem that said, “How do you feel about the activity depicted in your post? It was:” and four items scored on a 7-point semantic differential scale. The items were: unpleasant–pleasant, unenjoyable–enjoyable, dissatisfying–satisfying, and uninteresting–interesting, Cronbach’s $\alpha = .86$.

3.4. Results

In all analyses, publicness was coded as: private condition = -0.5, public condition = 0.5; ephemerality was coded as: persistent condition = -0.5, ephemeral condition = 0.5. All continuous predictors were mean-centered.

To test H1, H2a, H3, H4, H6, and H7, perceived memory vividness was regressed on self-relevance, engagement, editing, presumed close audience knowledge, publicness, ephemerality, and the publicness × ephemerality interaction. The overall model was significant, $F(7, 155) = 2.12, p = .045, R^2 = .09$. Self-relevance ($b = 0.10, p = .035$) was the only significant predictor, supporting H1. See Table 1 for the full results.

To test H2b, RQ1, RQ2, RQ3, RQ4, and RQ5, enjoyment was regressed on the same set of predictors: self-relevance, engagement, editing, presumed close audience knowledge, publicness, ephemerality, and publicness × ephemerality. The overall model was significant, $F(7, 155) = 9.22, p < .001, R^2 = .29$. Self-relevance ($b = 0.27, p < .001$), engagement ($b = 0.11, p = .019$), and presumed close audience knowledge ($b = 0.13, p = .019$) predicted enjoyment, while the other predictors were non-significant. Hence, H2b, RQ1, and RQ5 were supported. See Table 2 for the full results.⁵

Model 4 of Hayes' (2022) PROCESS was used to test H5, which predicted an indirect effect of publicness on perceived memory vividness via commitment. Based on 5000 bootstrapped samples, commitment did not mediate the relationship between publicness and perceived memory vividness (effect = -0.016, $SE = 0.035, 95\% CI = [-0.088, 0.056]$). Therefore, H5 was unsupported. See Table S1 in the Online Supplemental Materials for the full results.

Table 1
Predictors of perceived memory vividness, Study 1.

	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	η^2_{partial}
Intercept	6.14	0.08	78.15	<.001	
Self-relevance	0.10	0.04	2.13	.035*	
Engagement	0.08	0.05	1.74	.083	
Editing	0.02	0.05	0.35	.724	
Presumed close audience knowledge	0.09	0.06	1.66	.100	.04
Publicness	-0.04	0.16	-0.27	.786	
Ephemerality	-0.14	0.16	-0.83	.408	
Publicness × Ephemerality	-0.25	0.32	-0.78	.434	

Note. Publicness: private = -0.5, public = 0.5; Ephemerality: persistent = -0.5, ephemeral = 0.5. * $p < 0.05, **p \leq 0.01, ***p \leq 0.001$.

⁵ Due to the similarity between the private + persistent and the private + ephemeral conditions, additional analyses were run with the two private conditions combined. Helmert coding was employed, which required the creation of two new variables: Helmert1 and Helmert2. For Helmert1, the public + persistent condition was coded 1/3, the public + ephemeral condition was coded 1/3, and the combined private condition (i.e., the combination of the private + persistent and private + ephemeral conditions) was coded -2/3. For Helmert2, the public + persistent condition was coded 1/2, the public + ephemeral condition was coded -1/2, and the combined private condition was coded 0. Thus, Helmert1 was a test of publicness (i.e., public + persistent and public + ephemeral vs. private) and Helmert2 was a test of ephemerality (public + persistent vs. public + ephemeral). The regression models were then re-run. Publicness, ephemerality, and publicness × ephemerality were removed as predictors, and replaced with Helmert1 and Helmert2. The pattern of results stayed the same. Self-relevance remained the only significant predictor of perceived memory vividness ($b = 0.10, p = .032$). Self-relevance ($b = 0.27, p < .001$), engagement ($b = 0.11, p = .014$), and presumed close audience knowledge ($b = 0.13, p = .020$) remained the only significant predictors of enjoyment.

Table 2
Predictors of enjoyment, Study 1.

	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	η^2_{partial}
Intercept	6.02	0.08	79.58	<.001	
Self-relevance	0.27	0.04	6.25	<.001***	.25
Engagement	0.11	0.05	2.37	.019*	
Editing	0.02	0.05	0.45	.654	.04
Presumed close audience knowledge	0.13	0.05	2.37	.019*	
Publicness	-0.19	0.15	-1.25	.214	.03
Ephemerality	-0.07	0.16	-0.47	.643	
Publicness × Ephemerality	0.08	0.31	0.25	.802	

Note. Publicness: private = -0.5, public = 0.5; Ephemerality: persistent = -0.5, ephemeral = 0.5. * $p < 0.05, **p \leq 0.01, ***p \leq 0.001$.

3.5. Post-hoc analysis

Due to the extensive theorizing regarding the supposedly cardinal role of public commitment as a mechanism in self-effects (e.g., Carr et al., 2021; Pingree, 2007; Valkenburg, 2017), the lack of empirical support for commitment (H5) was surprising. As part of an exploratory analysis, the theoretical reasoning behind public commitment was reconsidered: It may be that publicness influences commitment indirectly rather than directly. A less parsimonious but more theoretically nuanced proposition is that a message sent in public is presumed to be known by close ties to a greater extent than the same message kept in private, and that people commit to what they said in the message because they believe their close ties know about it—and not because the message was public *per se*.

To test this new proposition, a serial mediation model was proposed: The relationship between publicness and perceived memory vividness is mediated serially, first by presumed close audience knowledge, and then by commitment. Model 6 of PROCESS (Hayes, 2022) was used to create 5000 bootstrapped samples and run the analysis. Results showed that presumed close audience knowledge and commitment serially mediated the relationship between publicness and perceived memory vividness (effect = 0.021, $SE = 0.012, 95\% CI = [0.002, 0.048]$). The other indirect paths produced as part of the analysis were non-significant. See Fig. 1 and the Online Supplemental Materials (Table S2).

3.6. Discussion

Study 1 tested the effects of psychological variables inspired by the bidirectional message effects model and social media affordances inspired by the identity shift theory on perceived memory vividness and recalled enjoyment.

Results showed the importance of several psychological factors in self-effects. The self-relevance of an experience described in a message predicted people's perceived memory vividness and enjoyment of the experience. Likewise, people's level of engagement (i.e., absence of mind-wandering) with the experience predicted how enjoyable they thought the experience was. Additionally, greater presumed close audience knowledge—the expectation that close ties will know of what was posted—also predicted greater enjoyment. That is, the more one believes that close others are aware of one's posts, the more enjoyable one perceives the posted experience to be.

Assuming that the social media posts people share are at least minimally positive due to impression management concerns, this result favors the capitalization perspective to public sharing, which claims that sharing positive experiences with others augments the positive feelings regarding those experiences (Langston, 1994). In contrast, the self-presentational concern perspective, which argues that sharing about oneself induces anxiety due to worries of impression management failure (Leary et al., 1988), was not supported.

Publicness did not directly influence perceived memory vividness and the hypothesized self-effects mechanism of public commitment was

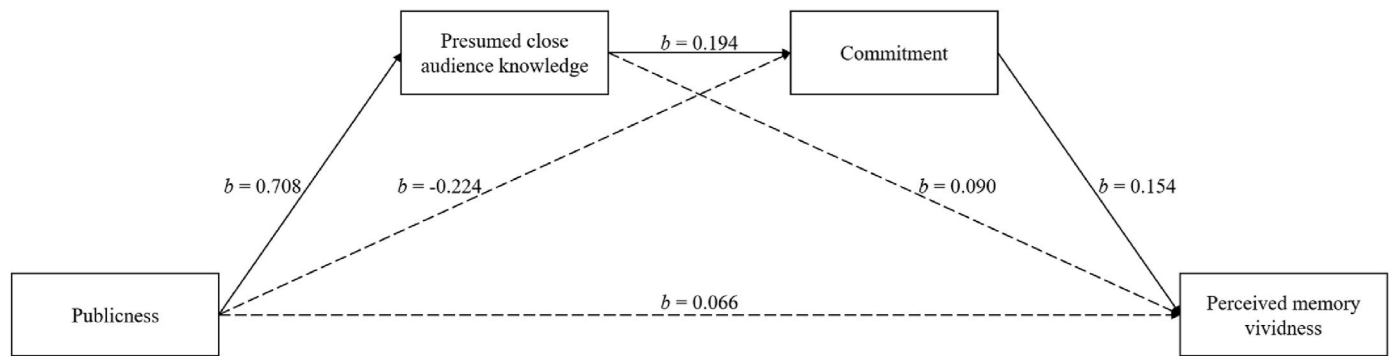


Fig. 1. Graphical Representation of Mediation Model, Study 1

Note. Solid lines represent significant paths, dashed lines represent non-significant paths.

also unsupported as a mediator. Instead, an exploratory mediation analysis found that publicly posting on social media led to greater presumption that close ties had knowledge of what was posted than if the same information were kept private. And it was this greater presumption of close ties' knowledge—rather than publicness in itself—that fostered greater commitment, which in turn predicted greater perceived memory vividness.

Study 1 had several limitations. The first limitation concerned unknown differences between Snapchat and Instagram Story, which may have contributed to the null effects for ephemerality. Although both are ephemeral media, they may be associated with different usage patterns and motivations, which could have affected results in unknown ways. Therefore, Study 2 examined only Instagram to eliminate potential app-related confounds, which should produce a cleaner test of ephemerality. The second limitation concerned the sample. A considerable portion of the total sample—55 participants—were excluded from analyses for failing attention checks. Participants were also university undergraduates, who by dint of their age and educational status, may or may not behave in ways similar to the US population. Thus, Study 2 aimed to recruit a larger sample from a wider online panel.

4. Study 2

Study 2 was an online survey. It invoked an alternative measure of commitment, which improved its reliability (see Measures, below). Study 2 also operationalized ephemerality in a more robust way: In Study 1, participants in the private + ephemeral condition created posts using ephemeral social media functions, but took a screenshot instead of actually posting their content (creating, perhaps, merely an illusion of ephemerality), which was remedied in Study 2. Finally, Study 2 presented another opportunity to test the indirect effect of publicness on perceived memory vividness via the serial mediators of presumed close audience knowledge and commitment.

Unlike Study 1—which instructed participants to take photos in a certain way, then keep the photos private or share them publicly on their actual social media accounts—Study 2 asked participants questions about photos they have already uploaded on their own accord. Study 2 required participants to recall, based on random assignment, one of three things: a public + persistent photo, a public ephemeral photo, or a private photo. In other words, the *photo condition* was a between-subjects factor with three levels. Participants then answered a questionnaire based on the recalled photo.⁶

⁶ Whereas Study 1 was conducted when there was extensive social distancing due to Covid-19, Study 2 was conducted when in-person activities have largely resumed, by which time masks and vaccines were widely available.

4.1. Sample

Participants were recruited from Prolific, a vendor for online study samples. Participants had to be US citizens who used Instagram at least once a month. Participants who failed either of two attention check questions or confessed to not following instructions were removed from analyses ($n = 8$). By manually reading the responses from the open-ended questions (see Procedure, below), several participants were also removed because their responses showed that they clearly did not follow instructions ($n = 4$). After deleting these bad data, a total of $N = 440$ participants were retained for analyses.

Most participants were female (64.3%; male = 33.2%; other/prefer not to say = 2.3%). Their ages ranged from 18 to 50 ($M = 31.3$, $SD = 8.2$). White participants comprised 73.0% of the sample, Asian participants 7.5%, Black participants 5.9%, Hispanic or Latino/a participants 4.5%, American Indian or Alaska Native participants 0.2%; the remaining participants indicated mixed or “other” ethnicity.

4.2. Procedure

After agreeing to participate, participants were told: “Without searching your phone or looking at the photo, think of the most recent photo you have” that fulfilled two criteria. The first criterion was that the photo had to be “taken when you were personally engaged in an activity,” with the elaboration that “this could be any activity—such as walking the dog, cooking at home, meeting friends, watching the sunset, etc.” The second criterion depended on the condition that participants were randomly assigned to, as participants were randomly instructed to recall (a) a public + persistent photo, (b) a public + ephemeral photo, or (c) a private photo. The second criterion for participants in the public + persistent photo condition was that the photo must have been previously “shared on Instagram as a post;” for participants in the public + ephemeral condition, the photo must have been previously “shared on Instagram as an Instagram Story;” for participants in the private condition, the photo cannot have been “[shared] with anyone else through social media.” See the Online Supplemental Materials for the exact instructions.

Based on the assigned photo condition, participants were then required to answer three open-ended questions regarding the photo. The first question asked, “where were you?,” the second question asked, “what were you doing?,” and the third question required participants to describe the photo to an imaginary friend. Participants had to answer the third question with at least 40 words before they were allowed to proceed (see the Online Supplemental Materials). These three questions were designed to help participants focus their thoughts on the selected photo. They also served to identify participants who did not follow instructions. After answering these three questions, participants were told to “[think] about the photo but without looking at it” as they completed the rest of the measures.

4.3. Measures

Commitment ($M = 5.30, SD = 1.30$) was measured using a two-step approach. The first step required participants to write a word or phrase that described how they thought they portrayed themselves in the photo. Participants were told to “fill in the blank below with an adjective or two: This photo makes me come across as ____.” A few examples were also provided to participants; they were told: “for example, if the photo shows you scaling Mt. Everest, you might write ‘strong and adventurous’ in the blank. If the photo shows a painting you worked on, you might write ‘creative’ or perhaps ‘artistic’ in the blank.”

The second step instructed participants to consider the adjective or phrase they provided in step one as the “image” of themselves, then indicate the extent to which they would like to maintain this “image” of themselves. The question stem read: “Consider the aspect of yourself you just mentioned—that is, you are sometimes [adjective]. If being [adjective] is one dimension of your image of yourself, would you say that?”. The question stem was followed by five items, namely: “You are committed to this image of yourself,” “You try to live up to this image of yourself,” “You strive for consistency between who you are in real life and this image of yourself,” “You try to maintain this image of yourself in various situations,” and “You are committed to being true to this image of yourself.” Items were rated from 1 (*strongly disagree*) to 7 (*strongly agree*), Cronbach’s $\alpha = .94$.

A minor change from Study 1 was made in the way *presumed close audience knowledge* ($M = 5.05, SD = 1.52$) was measured. Participants were still told that “close others” refers to friends and family whom they are close to, and rated three items from 1 (*strongly disagree*) to 7 (*strongly agree*). However, the three items now read: “Close others may remember/know about/be able to recall my photo” in all conditions, Cronbach’s $\alpha = .94$. *Perceived memory vividness* ($M = 6.12, SD = 0.92$, Cronbach’s $\alpha = .95$) was measured in the same way as in Study 1.

4.4. Results

Model 6 of PROCESS (5000 bootstrapped samples) was used to test the hypotheses. The predictor in the model was photo condition, where the public + persistent condition was coded 0 and dummy codes were created (by PROCESS) for the public + ephemeral condition and the private condition. Therefore, the first dummy code comparing the public + persistent condition vs. the public + ephemeral condition was a test of ephemerality, and the second dummy code comparing the public + persistent condition vs. the private condition was a test of publicness. As the private condition was implicitly persistent (i.e., photos stored on a phone’s memory do not delete themselves), comparing the private condition against only the public + persistent condition was a more appropriate test of publicness than comparing the private condition to both the public + persistent and the public + ephemeral conditions.

There was a significant indirect effect for the focal mediation model

between publicness (i.e., the comparison between the public + persistent condition and the private condition) and perceived memory vividness, mediated serially first by presumed close audience knowledge then by commitment (effect = $-0.023, SE = 0.012, 95\% CI = [-0.049, -0.003]$). Results also showed a significant indirect effect between publicness and perceived memory vividness, mediated by presumed close audience knowledge alone (effect = $-0.143, SE = 0.042, 95\% CI = [-0.231, -0.065]$). The other indirect paths, including all indirect paths for ephemerality (i.e., the comparison between the public + persistent condition and the public + ephemeral condition), were non-significant. Notably, even with the improved measure of commitment, publicness did not significantly influence commitment. Consequently, the indirect path from publicness to perceived memory vividness via commitment was also not significant. See Fig. 2 and the Online Supplemental Materials (Table S3).

4.5. Study 2 discussion

Study 2 replicated the finding from Study 1 that people commit to what they publicly share on social media not due to the affordance of publicness, but because they presume their close ties know of their post. As such, some of the theorizing regarding self-effects needs to be reconsidered. There has been, thus far, some ambiguity regarding the definition of “public” when public commitment is proposed as a mechanism in self-effects: Are people committed to the public, as in others in general, or are people committed due to the public nature of a statement they made, as in the public accessibility of their statement (i.e., the affordance of publicness)? The mediation results in Studies 1 and 2 suggest that neither explanation is entirely correct. People are not necessarily committed to an undifferentiated public or because something they said is publicly accessible on the web. Rather, people are committed to the image of themselves that they portray to their family and close friends. Put differently, people desire to be consistent to those who matter to them.

Despite the different operationalization of ephemerality in Study 2 than in Study 1, there was no evidence that ephemerality influenced presumed close audience knowledge, commitment, or perceived memory vividness. There was no support for the idea that ephemerality releases people from commitment and therefore acts as a boundary condition for the effects of publicness.

Like Study 1, Study 2 also has several limitations. Although participants were told to think of their most recent photo without searching their phones, the researchers did not have the capacity to monitor whether participants searched their phones or not. If participants ignored instructions and searched their phones, the likely result would be that the public + persistent and private conditions were more strongly associated with perceived memory vividness than the public + ephemeral condition (assuming the ephemeral photos were deleted and cannot be checked). As the results did not reflect this pattern, it was

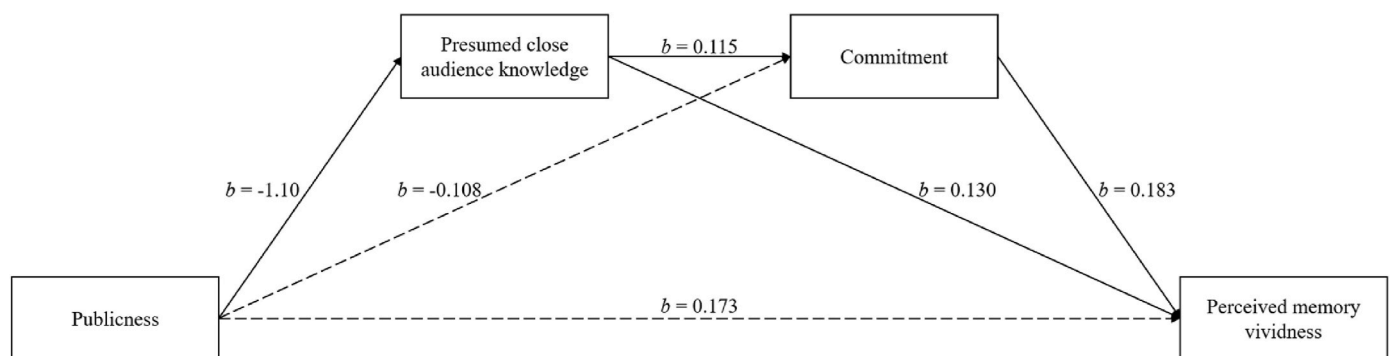


Fig. 2. Graphical Representation of Mediation Model, Study 2
 Note. Solid lines represent significant paths, dashed lines represent non-significant paths. Paths for ephemerality were not shown as they were all non-significant.

likely that most participants obeyed the instruction not to check their phones.

Another limitation is that the difficulty of assessing directionality in a cross-sectional survey. Directionality could be reversed if people decided to publicly share experiences that were more important/memorable, but kept private experiences that were less important/memorable. Notwithstanding this limitation, the mediation model was sensible given the theoretical reasoning, and it replicated the results of Study 1. The naturalistic aspects of Study 2 should be viewed as complementing, but not replacing, experimental research.

5. General discussion

This research made several important contributions. First, it tested several psychological factors (i.e., self-relevance, engagement, editing, presumed close audience knowledge) and social media affordances (i.e., publicness, ephemerality) that may be pertinent to a social media context based on the bidirectional message effects model (Pingree, 2007) and identity shift theory (Carr et al., 2021). Results demonstrated that self-relevance and engagement are positively related to perceived memory vividness and enjoyment. As such, these psychological factors, inspired by Pingree's (2007) expected expression effects and message composition effects, have important consequences for self-effects—despite having been largely ignored by communication scholars because they are distal antecedents to message sending.

The second important contribution by this research concerns the understanding of what “public commitment” means within a self-effects paradigm. Publicness, as an affordance, did not directly engender greater commitment to one's self-image. Rather, the relationship between publicness and commitment was more nuanced: Publicly sharing a message led to greater presumed close audience knowledge than keeping the same message private, which then led to greater commitment, and subsequently greater perceived memory vividness. The implication is that people's commitment to their shared self-views is developed by their relationships with close others, who constitute an important group to which one feels accountable and is likely a cherished source of public affirmation. This result also bolsters the idea of a multifaceted conceptualization of “public” in identity shift theory, complementing existing empirical research showing that publicness can be conceptualized as an audience of one (Tice, 1992) or public accessibility (Gonzales & Hancock, 2008). Future research can attempt to resolve a limitation of the present research, which did not measure or manipulate the extent to which people calibrated the publicness settings of their social media. For example, the distinction between accounts that could be viewed by everyone versus accounts that could be viewed only by online “friends” could be a meaningful one.

Third, ephemerality had no significant effects on perceived memory vividness, enjoyment, presumed close audience knowledge, and commitment—both immediately after (Study 1) and awhile after (Study 2) message release. As Bayer et al. (2016) pointed out, ephemeral communication has always been around, in the form of face-to-face interactions. Just as it is socially taboo to renege on what one has said to others face-to-face, it may also be unacceptable to go back on what one has posted online, regardless of ephemerality. Put differently, the lack of concrete, persistent evidence holding one accountable does not mean one has the liberty to be unaccountable. Relatedly, Choi et al. (2020) found that sending messages via ephemeral media induced greater self-effects than sending messages via persistent media. They theorized this was because ephemeral media freed people from self-presentational concerns, hence they self-presented with their actual selves—but on persistent media, people strategically (inauthentically) self-presented. This process is a countervailing force to the notion that persistent media engender greater self-effects because they hold message senders accountable. Is it possible that the co-occurrence of both processes led to the null effects for ephemerality? This may be a line of inquiry that future research can explore.

As a whole, this research showed how people's perceptions of their past experiences are influenced by the sharing of those experiences on social media. Due to the factors unique to social media, people's degree of vividness and enjoyment of their remembered experiences may be different than if people kept those experiences private. As social media tools are increasingly invoked to share one's life events with others, the psychological, social, and affordance-based explanations for self-effects pertaining to that sharing is critical to understand how people use social media to complement their memories of those life events.

CRedit authorship contribution statement

Zijian Lew: Writing – review & editing, Writing – original draft, Visualization, Project administration, Formal analysis, Conceptualization. **Andrew J. Flanagin:** Writing – review & editing, Writing – original draft, Formal analysis, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Materials underlying this article will be shared on reasonable request to the corresponding author.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.chb.2024.108200>.

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