A Snap of Your True Self: How Self-Presentation and Temporal Affordance Influence

Self-Concept on Social Media

Sukyoung Choi, Dmitri Williams,
University of Southern California, USA

Hyeok Kim
Northwestern University, USA

Accepted version: November 6, 2020

Contact information:

Sukyoung Choi, Annenberg School for Communication and Journalism, University of
Southern California, 3502 Watt Way, Los Angeles, CA 90089. Email: sukyounc@usc.edu

Abstract

This study examined how self-presentation on social media influences the way people view themselves. It also examined whether that varies with sites using two temporal features: posts which have a short life (ephemeral) and those which live indefinitely (permanent). Drawing on both the notion of public commitment and self-symbolizing, our experiment provided a critical test of two rival theory-driven hypotheses—one suggesting a greater internalization of presented self on permanent rather than ephemeral social media and the other suggesting the opposite pattern. Supporting the self-symbolizing perspective, those who publicly presented themselves on ephemeral social media internalized their portrayed personality. Also, such a difference in internalization between the two conditions was triggered by an introverted self-presentation. Results suggest that ephemerality enhances self-symbolizing efforts and the subsequent internalization by affording nonstrategic self-presentation and reducing impression management concerns. Implications for understanding self-concept change in social media contexts are discussed.

Keywords: self-concept change, self-presentation, temporal affordance, public commitment, self-symbolizing, social media

A snap of your true self: How self-presentation and temporal affordance

influence self-concept on social media

Self-presentation is a core motivation for social media use (Nadkarni and Hofmann, 2012). Indeed, a recent survey found that posting content is one of the most prominent features that mark social media interactions (Herhold, 2019). Roughly 40 percent of respondents reported that they post at least once a day, and the types of content range from images, updates and videos to opinions. Set against this backdrop, it is of great importance to question if engaging in self-presentation and posting on social media would affect the posters themselves. Do people experience changes in the way they view themselves after sharing posts on social media? This phenomenon, typically referred to as self-concept change or identity shift[1], pertains to individuals' internalization of their behavior, which, in turn, leads them to evaluate themselves as being more consistent with the presented self (Tice, 1992).

Previous studies have demonstrated that not only self-concept change occurs after mediated presentation, but also such a transformative effect of self-presentation is amplified when they present themselves publicly (Gonzales and Hancock, 2008), receive feedback from others that confirms their presented identities (Carr and Foreman, 2016; Walther et al., 2011), and when such a feedback is from relationally close others (Carr and Foreman, 2016). The current study builds upon and advances this line of research by examining the role of temporal affordances in self-concept change in the context of social media. Permanence and ephemerality are at the opposite ends of temporal affordances. In stark contrast to the typical

---

[1] Although the term "self-concept change" appears predominantly in the social psychological literature, two terms—"self-concept change" and "identity shift"—have been used synonymously and interchangeably in the communication literature (e.g., Carr and Foreman, 2016; Carr and Hayes, 2019; Gonzales and Hancock, 2008; Valkenburg, 2017; Walther et al., 2011).

social media with automatic and permanent data archiving, some social media such as Snapchat and Instagram have actively adopted ephemerality, where content disappears after 24 hours or immediately upon receipt. These contrasting time-based features are closely related to other types of affordances. For example, as permanence prolongs the accessibility of information (Bayer et al., 2015), we can infer that it makes content easily located by others (high visibility) and also elevates the interactivity among users (high social interactivity) compared to ephemerality. Therefore, prior research that demonstrated the role of publicness and feedback in self-concept change can inform us of the prospective effect of temporal affordances and its implications. By bringing forth these two distinct temporal affordances, we entertain the possibility of an interaction between self-presentation and time.

In so doing, we propose two rival hypotheses based on both the public commitment and self-symbolizing perspectives and critically test them. On the one hand, the public commitment perspective suggests that people may experience a greater self-concept change on permanent social media because of the stronger public commitment they experience. The prolonged accessibility of information that permanent social media affords should translate into the perception of a larger audience size. In turn, people will feel more pressured to be consistent with their commitment to the audience and evaluate themselves as being more congruent with the presented self (Schlenker et al., 1994). On the other hand, the self-symbolizing perspective suggests that the internalization of self-presentation may be greater on ephemeral social media. According to this perspective, people tend to make efforts to acquire the symbols relevant to the self-concept they wish to attain (Wicklund and Gollwitzer, 1982). These identity-constructing efforts are called self-symbolizing activities. Self-symbolizing individuals may present themselves to others to test whether the intended self-concept is coming across, but such behavior is not motivated by strategic concerns such as the attempt to please the others (Gollwitzer, 1986). Therefore, Gollwitzer (1986) noted that

their self-presentation is self-constructive in nature. As ephemerality frees people from strategic self-presentational concerns (Xu et al., 2016), self-symbolizing efforts will be successfully carried out and the subsequent internalization of the presented self is more likely to occur. We conducted an online experiment to see which theoretically driven explanation is supported by empirical data.

This study advances this strand of literature in several respects. First, we bring forth an underutilized theoretical framework, self-symbolizing, in understanding self-concept change. This framework is pitted against public commitment, which is a prevailing paradigm in the extant self-concept change literature. Second, we explicitly test the role of social media affordances suggested to be important in online self-concept change (Valkenburg, 2017). Broadly, this study makes a contribution to self-effects research. Self-concept change is subsumed under self-effects, which are broadly conceptualized as "the effect of messages on the cognitions (knowledge or beliefs), emotions, attitudes, and behavior of the message creator/senders themselves" (Valkenburg et al., 2016: 2). Considering that traditional media effects as well as computer-mediated communication theories have mostly devoted their attention to the unidirectional impact of media properties on recipients (Valkenburg et al., 2016), exploring self-effects is relatively new. By examining the role of temporal affordance and its mechanism, we identify a condition that facilitates such effects. First, it must be grounded in a theoretical context of self-presentation and self-concept change.

Self-presentation and self-concept change

Self-concept broadly refers to "the collection of beliefs and attitudes of an individual about him or herself" (Valkenburg, 2017: 3). Moving beyond previous research that stressed either the stability or malleability of self-concept, some scholars have suggested that it may possess both properties (for a review, see Markus and Kurf, 1987). In Markus and Kunda's (1986) terms, self-concept is composed of multiple self-conceptions, and "the working self-

concept" is a subset of self-conceptions which is constructed from one's social experiences and contexts. While the working self-concept appears to be stable due to the relative stability of the universe of self-conceptions, it can be also viewed as mutable in that its content and configuration vary with the immediate social contexts (Markus and Kunda, 1986).

Building on the notion of a fluidity of the working self-concept, numerous findings in social psychology have provided converging evidence for the effects of self-presentation on self-concept change. That is, individuals internalize their behaviors such that they come to regard themselves as actually possessing the traits implied by their self-presentations (Tice, 1992). In theorizing self-concept change, scholars have underscored several intrapersonal processes, most notably the theories of biased scanning (Jones et al., 1981). According to this theory, the act of self-presentation directs individuals' attention toward certain dimension of the self that are compatible with their behaviors. Subsequently, individuals come to assess themselves in the direction of cognitions that became salient in their memories. By using the psychological trait of extraversion/introversion as a focal dimension of self-concept, experimental studies have shown that participants who presented themselves as extraverts later rated themselves as being more extraverted than do participants who portrayed themselves as introverts (Fazio et al., 1981; Tice, 1992).

Replicating and extending prior research on self-concept change in offline settings, communication scholars have shown that mediated self-presentations also have a transformative effect on self-concept, both independently (Study 2 in Carr and Hayes, 2019) and jointly with others' feedback following the self-presentations (Carr and Foreman, 2019; Walther et al., 2011). For example, in lieu of the self-perceptions of extraversion/introversion, Carr and Hayes (2019) focused on a different aspect of self-concept—brand identification—and found that participants tended to internalize their selective self-presentation as either a loyal brand adherent or not, and such an effect was

amplified when the subsequent feedback confirmed the self-presentation. Collectively, the extant literature shows that self-presentational behaviors may influence the way presenters view themselves, and also, the certain affordances of online platforms in which self-presentation is enacted can facilitate biased scanning and internalization process. Social media are an increasingly vital context to understand.

Social media affordance and self-concept change

Social media have been ingrained into our daily lives and serve as a primary means of social interactions for many. According to a 2018 Pew Research Center Survey, a majority of American users not only use multiple social media platforms, but also visit each platform on a daily basis (Smith and Anderson, 2018). Social media provide fertile ground for identity formation, where people construct their identities via presenting various dimensions of the self, which ranges from idealized to actual selves (Ellison et al., 2006; Zhao et al., 2008). Despite some variations, the idea that our self-concepts are composed of multiple dimensions is commonly accepted in psychology and sociology. For example, Higgins (1987) distinguished between the actual self (attributes that people currently possess), the ideal self (attributes that people would strive to possess in the future), and the ought self (attributes that people ought to possess). Rogers's (1951) notion of the true self differs from these versions as it refers to attributes that are currently existing and important, yet not usually expressed to others.

Prior research on online self-concept change has rarely incorporated these typologies of self-concept. Rather, the conceptualization of self-concept has been mostly confined to what attributes of the self are being presented and internalized, which ranged from personality traits (Gonzales and Hancock, 2008), brand identification (Carr and Hayes, 2019) to political self-concept (Lane et al., 2019). The current study introduces these typologies because of their particular relevance to social media properties, otherwise known as

affordances. Affordances refer to "the perceived and actual properties of the thing, primarily those fundamental properties that determine just how the thing could be used" (Norman, 1988: 9). People tend to disclose different aspects of the self, depending on which social media they are using (Choi and Sung; Fox et al., 2018). For example, Choi and Sung (2018) found that Snapchat use was associated with true and actual self-presentations whereas Instagram use was linked to idealized self-presentations. As such, self-concept typologies and affordances are closely intertwined and this connection between the two may be integral in understanding the internalization process.

In her review article, Valkenburg (2017) hinted at some of these possibilities by emphasizing the role of affordances in online self-effects. For example, she stated that various affordances such as cue-manageability and asynchronicity offer users a unique opportunity to carefully construct their self-presentations, which may in turn, facilitate the internalization process. Cue-manageability enables users to "show or hide visual or auditory cues about the self while communicating" and asynchronicity provides them the ability to "communicate when it suits them, in a real time (synchronously) or delayed (asynchronously)" (Valkenburg and Piotrowski, 2017: 221). Thus, it stands to reason that social media platforms with certain types of affordances may be more potent in expediting the internalization of self-presentation than others. This study explores this possibility by focusing on the role of two contrasting time-based features of social media—permanence and ephemerality—in self-concept modification. We propose two competing hypotheses by employing both the prevailing paradigm (i.e., public commitment) and underutilized theoretical framework (i.e., self-symbolizing). These two mechanisms are discussed in terms of the internalization of *the true self*, one of the self-concept typologies discussed above. Before explicating the two mechanisms, we define permanence and ephemerality and examine the relevant literature.

Temporal affordances of social media: Permanence and ephemerality

Permanence and ephemerality are polar opposites of one another in terms of temporality. Scholars have typically included permanence or persistence as one of the important features that characterizes social media (boyd, 2010; Treem and Leonardi, 2010). Permanence is defined as "a category of temporal affordances that can influence user experiences on social platforms by prolonging the accessibility of social information" (Bayer et al., 2015: 1). However, as recent social media platforms such as Snapchat and Instagram have increasingly adopted a default deletion in their designs, researchers have begun to consider ephemerality as an important social media affordance alongside permanence. In ephemeral social media, content is only accessible for only a limited period of time, and then self-destructs. Snapchat first introduced ephemeral content sharing by allowing users to share snaps for a few seconds. A "Story" feature with a 24-hour time window was then added and other popular social media have subsequently adopted its own version of Stories. Interactions on ephemeral social media is akin to face-to-face interaction, yet it differs in terms of asynchronicity (Bayer et al., 2015).

Previous studies have suggested that users' expectations and experiences differ in social media that afford ephemerality from those that afford permanence. For example, using both an experience sampling method and an in-depth interview, Bayer et al. (2015) showed that using snaps that disappear after a few seconds confers more social and emotional benefits compared to other forms of communication, and this may be partly due to the interaction with close ties and reduced impression management concerns. Stories also lower self-presentational pressure compared to persistent Feed posts (McRoberts et al., 2017), primarily because feedback is not visible to third parties and people have low expectations for responses (Triệu and Baym, 2020). Collectively, these studies suggest that the effects of self-presentation on self-concept may differ depending on whether self-presentation is performed

in ephemeral or permanent social media settings. We thus explore if these two distinct temporal affordances mold self-concept in a different manner, and if so, in what direction. To understand the effects of temporal affordances on self-concept change, two competing explanations need to be critically assessed.

Two rival theory-based mechanisms to predict the interaction effects of self-presentation and temporal affordance

Public commitment

The first explanation is grounded in the notion of public commitment. Social psychologists have long proposed that once individuals make a commitment, they feel pressured to be consistent with prior commitment (Cialdini, 1993), and to avoid cognitive dissonance (Festinger, 1957). Commitment refers to "a force that ties the individual to some psychological entity" (Schlenker et al., 1994). Presenting oneself to the public in a certain way creates a public commitment, which drives people to behave congruently with the publicly presented self.

Drawing on this public commitment framework, previous studies have demonstrated that an awareness of being public or a sense of publicness amplifies the effects of self-presentation on self-concept (Gonzales and Hancock, 2008; Tice, 1992). Importantly, people also commit themselves to an imagined audience (Schlenker and Weigold, 1992; Schlenker and Wowra, 2003), which is particularly pertinent to the investigation of self-presentation on social media where there is no immediate audience with physical presence. For example, in one study (Gonzales and Hancock, 2008), participants who presented themselves publicly on a blog internalized the presented personality, whereas those who presented themselves privately in a text document did not.

Although the impact of public self-presentation compared to its private counterpart has been well documented, little is known as to how different levels of publicness within such

public self-presentations would modify self-concept by varying the strength of commitment people experience. One notable exception is Lane et al.'s (2019) study, which found that political expression on Facebook that signals a relatively weak and ambiguous public commitment such as liking political content did not shape people's political self-concepts via increased political self-presentation motivations, whereas expressive behaviors with a high level of public commitment such as writing a political opinion post strengthened political self-concepts.

The advent of ephemeral social media systems offers a unique opportunity to explore this possibility as the temporal contrast between ephemerality and permanence signals different levels of public commitment. People take advantage of the online environment for their true self-expressions (for a review, see Hu et al., 2019) and subsequently, their true selves may be internalized as a result of public self-presentation; however, the extent to which people internalize their true selves may differ depending on whether such expressions take place on permanent or ephemeral social media. In the public commitment framework, a permanent self-presentation will induce stronger public commitment compared to an ephemeral one. This is because the greater accessibility that permanence affords should translate into the perception of a larger audience size, thereby strengthening commitment and consistency pressures. Therefore, it can be predicted that when people present their true selves publicly on social media which prolongs the accessibility, they will evaluate themselves as being more congruent with the presented self, compared to those who presented themselves publicly on ephemeral social media.

Self-symbolizing

The second explanation pertains to the notion of self-symbolizing. According to symbolic self-completion theory (Wicklund and Gollwitzer, 1982), individuals strive to acquire the symbols of a particular self-concept (identity) they wish to attain. Such identity-

constructing efforts refer to self-symbolizing activities. These activities or symbols can be both tangible and intangible. For example, if individuals have identity goals (e.g., becoming a good scientist), they would make efforts to acquire tangible symbols (e.g., wearing relevant clothes) and/or undertake other identity-relevant activities such as engaging in self-descriptions (Gollwitzer and Wicklund, 1985; Gollwitzer et al., 1982) and stating their behavioral intentions (see Gollwitzer et al., 2009). Moreover, individuals are motivated to make their important aspects of self a "social reality," to have these attributes noticed and acknowledged by others so that they are incorporated into the actual self (Baumeister, 1998; Gollwitzer, 1986). The presence of an audience is thus pivotal as self-symbolizing efforts need to be noticed by others. Despite this, self-symbolizing individuals see the audience as a passive witness of their activities and thus they are less concerned with the audience's response and judgment (Gollwitzer, 1986). Thus, self-symbolizing involves self-constructive rather than strategic self-presentation (Gollwitzer, 1986). In this regard, the self-symbolizing perspective seems to stand in sharp contrast to the public commitment perspective as the internalization of the presented self is largely driven by the self-symbolizing individuals' commitment to the attainment of a particular identity per se, not by a commitment to others.

Public self-presentation on social media can be interpreted as one of intangible self-symbolizing activities. People may be motivated to make true selves a social reality by publicly presenting themselves on social media. This activity takes place in the plane of social reality because it is broadcasted to the audience. The presented identity will be successfully attained, or internalized through social media that better afford self-symbolizing activities. Building on the literature on the motivational aspects of the self, Bargh et al. (2002) argued that individuals are motivated to express their true selves and in doing so, they will take advantage of the Internet because of the relative anonymity that it affords. The current study takes this work a step further by proposing that individuals will intensify self-

symbolizing efforts and successfully attain or internalize the presented self on ephemeral social media as they afford nonstrategic self-presentation and reduced impression management concerns.

The accumulating evidence on ephemeral social media suggests that ephemerality indeed reduces privacy and self-presentational concerns, allowing people to let their guards down and be more authentic. For example, an interview with Snapchat users showed that ephemeral social media mitigate concerns for impression management, which in turn, encourage users to be more authentic (Study 2 in Bayer et al., 2015; Xu et al., 2016). Similarly, researchers have found that the expression of the true and actual self was more frequent among Snapchat users whereas that of the ideal self was more prevalent among Instagram users (Choi and Sung, 2018; Fox et al., 2018). Just as the Internet facilitates expression of the true self compared to typical face-to-face interactions by affording a greater sense of anonymity and reducing the potential repercussions of social sanctions (Bargh et al., 2002), ephemerality seems to provide individuals the opportunity to express the true self. Taken together, the self-symbolizing perspective predicts that internalization of the presented self would be great on ephemeral social media than on permanent social media.

Predictions can be drawn from these two competing explanations, allowing for a test of the critical case between them. Among various types of self-concepts, we particularly focus on self-presentation of personality traits for two reasons. First, personality traits have been extensively utilized in self-concept change literature both in offline (e.g., Tice, 1992) and online contexts (e.g., Gonzales and Hancock, 2008). Second, a large volume of prior research has discussed personality traits in relation to the expression of the true self such that personality traits were used as predictors of online true self-expression as well as direct measures of the true self (Hu et al., 2019). The two competing hypotheses are thus proposed using the case of personality self-presentation.

H1a: Individuals who engage in personality self-presentations on permanent social media will experience greater self-concept change than those on ephemeral social media.

H1b: Individuals who engage in personality self-presentations on ephemeral social media will experience greater self-concept change than those on permanent social media.

Method

Participants

A total of 277 participants were recruited via Qualtrics, an online survey company. A recent study (Boas et al., 2018) reported that in the US, the Qualtrics-recruited sample is higher quality, and tends to be closer to a representative national sample in terms of demographics, political variables, and media consumption compared to recruitment via Amazon's Mechanical Turk and Facebook advertisements. To ensure the familiarity with the ephemerality in social media design, and to better generalize to the age group most predominating social media, only young adults aged 18-34 were qualified for this study. In 2019, 71% of Instagram users and 82% of Snapchat users were aged 34 years and younger (Statista, 2019a, 2019b), which are two most prominent social media platforms that adopted ephemerality in their designs. All participants gave informed consent prior to participation and received monetary compensation after the study ended. Given that Internet-based experiments take place in a less-controlled setting compared to lab-based experiments (Reips, 2002), we excluded individuals who did not complete self-presentation tasks (n = 16) and who were identified as outliers due to unrealistic time spent on questionnaires and self-presentation tasks (n = 12). In doing so, the length of time participants spent on pre-test questionnaires (*M* = 4.70, *SD* = 6.80), self-presentation tasks (*M* = 5.10, *SD* = 9.59), and post-test questionnaires (*M* = 5.43, *SD* = 7.65) were recorded, respectively, and mean ± three standard deviations were used as thresholds for outlier detection. For example, participants who spent more than 34 minutes on self-presentation tasks were removed from the final

sample. Thus, a total of 249 participants (59 men, 187 women; age $M = 25.48$, $SD = 4.86$) were retained for analyses.

Experimental design and procedure

The current study adopted a 2 (Introversion/Extraversion Self-Presentation) × 2 (Permanence/Ephemerality) between-subjects design. Participants were randomly assigned to one of four conditions. Upon entering the study website, participants were provided with a detailed description of the cover story. They were informed that a social media startup company named "Daily Raily" is trying out a new feature, and they will be participating in a study jointly conducted by Daily Raily and a research team. After completing a pre-test questionnaire including demographic information, social media use, and self-monitoring, participants were asked to create a temporary Daily Raily account by providing their name and hometown. A mock-up Daily Raily page was presented where participants engaged in self-presentation tasks by posting a status message (see Figure 1). Adapting a protocol from previous studies (Carr and Foreman, 2016; Carr and Hayes, 2019; Gonzales and Hancock, 2008; Walther et al., 2011), each participant was asked to create a post by answering three questions: (1) describing their past friendships and what they did for fun with their friends, (2) the most memorable conversation they have had with their friends, and (3) the most important thing they have learned thus far from the relationship with their friends.

[insert Figure 1]

To manipulate personality self-presentation, participants were asked to answer the aforementioned questions as if they were either a shy and introverted or an outgoing and extraverted person. They were also instructed to write their response not by lying but by drawing on their personal experiences in order to encourage them to reflect on themselves and to engage them in a more deliberate exercise. To manipulate temporal affordances, participants were told that their posts will be either publicly visible to all Daily Raily users

(permanent condition) or publicly visible for only 24 hours (ephemeral condition). For the

ephemeral condition, a time frame of 24 hours, commonly known as a "Story" feature, was

chosen over a time frame of a few seconds due to its wide adoption across various social

media platforms including Snapchat, Instagram, WhatsApp, and Facebook. In order to ensure

that participants understood the ephemeral design, an additional explanation was given that

read, "This new feature is similar to the Stories format used in other social media such as

Instagram and Snapchat, where photos and videos are displayed for a limited period of time."

After they clicked a "share" button, their status messages appeared on a Daily Raily Feed so

that they would view their posts as it would appear on social media. Participants' status

messages were juxtaposed with other Daily Raily users' fictitious messages which were

blurred to prevent potential contaminating effects. Messages "Posted! Your post will be

deleted after 24 hours!" and "Posted! Your post has been successfully posted!" appeared for

the ephemeral and permanent conditions, respectively. This page was included to reduce the

artificiality and emphasize the publicness of the self-presentations. Upon completing a battery

of post-test questionnaires including the self-rating of extraversion (i.e., sociability), they

were thanked and debriefed. On average, it took about 12 minutes for participants to

complete the study.

Measures

Covariates. Participants' gender served as a demographic control. Gender was

dichotomized by recoding *male* as 0 and *female* as 1.

Self-monitoring was measured using the 13-item Revised Self-Monitoring Scale

(Lennox and Wolfe, 1984). Participants indicated how strongly they agreed with each of the

following statements (1 = *always false*, 7 = *always true*): for example, "I have the ability to

control the way I come across to people, depending on the impression I want to give them,"

"Even when it might be to my advantage, I have difficulty putting up a good front,"

(reversed) and "In conversations, I am sensitive to even the slightest change in facial expression of the person I'm conversing with." After appropriate recoding, the scores were averaged, with higher scores indicating high levels of self-monitoring ($\alpha = .84$, $M = 5.06$, $SD = 0.83$). Self-monitoring was included as a covariate because sensitivity towards an audience has been found to affect the internalization of behavior (Tice, 1992).

The amount of time participants spent on self-presentation tasks was also collected ($M = 3.94$, $SD = 2.83$). We included this measure as a potential confound because previous studies have shown that the length of time people spend on composing messages in computer-mediated environment reflects mindful processing and motivation for impression management (Walther, 2007).

Dependent variable. The self-rating of extraversion was assessed using the Sociability Scale (Cheek and Buss, 1981). Sociability has been found to be one of the defining characteristics of extraversion (Lucas and Diener, 2001). Differing from previous studies (Carr and Foreman, 2016; Gonzales and Hancock, 2008; Walther et al., 2011) that adopted a generic measure of extraversion which consists of 10 bipolar items, we particularly focused on the sociability aspect of extraversion considering that participants were instructed to express their experiences on their social relationships. Participants were asked to indicate the extent to which each statement is characteristic of their feelings and behaviors (1 = *extremely uncharacteristic*, 7 = *extremely characteristic*): "I like to be with people," "I welcome the opportunity to mix socially with people," "I prefer working with others rather than being alone," "I find people more stimulating than anything else," "I'd be unhappy if I were prevented from making many social contacts." Responses were then averaged, with higher values indicating high levels of sociability ($\alpha = .89$, $M = 4.60$, $SD = 1.42$).

Results

Manipulation check

To ensure that the temporality was manipulated as intended, participants were asked to rate the accessibility of their posts on the following two items (1 = *strongly disagree*, 7 = *strongly agree*): "My post will be displayed on Daily Raily for a long period of time" and "My post will be accessible to current Daily Raily users for a long period of time" ($r = .91$, $p < .01$). Responses to these two items were averaged. An independent-samples *t*-test confirmed that those assigned to ephemeral condition ($M = 2.73$, $SD = 1.75$) perceived that their posts are significantly less accessible to others than those assigned to permanent condition ($M = 4.23$, $SD = 1.75$), $t(247) = 6.47$, $p < .001$.

To verify that participants complied with the self-presentation instructions, we compared the linguistic differences between those assigned to the extraverted and introverted self-presentation conditions by analyzing their status messages. In so doing, we used the Linguistic Inquiry and Word Count v. 2015 (LIWC; Pennebaker et al., 2015), which is a computerized linguistic analysis program with its own internal dictionaries. Previous studies have shown that certain dictionary categories are highly correlated with extraversion and neuroticism by performing a large-scale analysis of language use in blogs via LIWC v. 2001 (Yarkoni, 2010) and Facebook via the open-vocabulary technique (Schwartz et al., 2013). We performed multivariate analysis of variance (MANOVA) on all dictionary categories provided by LIWC v. 2015 (a category called 'dictionary words' was excluded). The results were statistically significant, Wilks' $\lambda = .55$, $F(92, 156) = 1.41$, $p = .03$, partial $\eta^2 = .45$. The results of univariate effects showed that those who presented themselves as extraverts tended to score higher on categories of total word count, words per sentence, analytical thinking, emotional tone, reward, future focus, quotation marks, and parentheses; those who presented themselves as introverts tended to score higher on categories of first-person singular, common adverbs, negative emotion, sadness, family, cognitive processes, tentativeness, certainty, past focus, home, death, swear words, nonfluencies, apostrophes, all *ps* < .10.

Importantly, the relationships between affect-related dimensions and assigned personality traits aligned with those found in previous studies (Schwartz et al., 2013; Yarkoni, 2010).

Hypothesis tests

Main analyses with covariates. To examine how self-presentation affects the participants' self-concept change, jointly with temporal affordances, a 2 (personality self-presentation) × 2 (temporal affordance) analysis of covariance (ANCOVA) was performed on sociability, with gender, self-monitoring, and time spent on completing the writing task as covariates.

A significant interaction between personality self-presentation and temporal affordance emerged, $F(1, 239) = 5.75$, $p = .02$, partial $\eta^2 = .02$ (see Figure 2). Simple effect tests showed that in the ephemeral condition, participants who performed an introverted self-presentation ($M = 4.38$, $SD = 1.45$) tended to rate themselves as being less sociable than participants who performed an extraverted self-presentation ($M = 4.82$, $SD = 1.35$): $F(1, 111) = 3.93$, $p = .05$, partial $\eta^2 = .03$. On the contrary, in the permanent condition, self-ratings of sociability were not significantly different between those who enacted an introverted ($M = 4.78$, $SD = 1.24$) and extraverted self-presentation ($M = 4.56$, $SD = 1.54$): $F(1, 125) = 1.98$, $p = .16$, partial $\eta^2 = .02$. Consistent with *H1b*, these results suggest that the internalization of presented personality traits tended to occur only when self-presentations were performed on ephemeral social media.

[insert Figure 2]

Another way to decompose the interaction was to compare the ephemeral and permanent conditions within each personality self-presentation condition. The results showed that those who enacted an introverted self-presentation rated themselves as actually being less sociable when their posts were ephemeral ($M = 4.38$, $SD = 1.45$) than when they were permanently accessible ($M = 4.78$, $SD = 1.24$): $F(1, 127) = 5.07$, $p = .03$, partial $\eta^2 = .04$.

However, there was no difference in self-ratings of sociability between the ephemeral ($M =$ 4.82, $SD = 1.35$) and permanent conditions ($M = 4.56$, $SD = 1.54$) for those who engaged in an extraverted self-presentation, $F(1, 109) = 1.20$, $p = .28$, partial $\eta^2 = .01$. Put differently, it is the introverted self-presentation that triggered different levels of internalization on social media with contrasting time-based features.

Neither the main effect of personality self-presentation ($F(1, 239) = 0.43$, $p = .51$, partial $\eta^2 = .002$) nor temporal affordance ($F(1, 239) = 0.55$, $p = .46$, partial $\eta^2 = .002$) was significant. Among the covariates, both gender ($F(1, 239) = 4.14$, $p = .04$, partial $\eta^2 = .02$) and self-monitoring ($F(1, 239) = 21.19$, $p < .001$, partial $\eta^2 = .08$) had a significant effect on sociability. Men and high self-monitors were more likely to rate themselves as sociable. However, completion time did not significantly influence sociability ($F(1, 239) = 0.02$, $p = .90$, partial $\eta^2 = .00$).

Supplementary analyses. Additionally, we performed an ANCOVA on the measure of sociability, using personality self-presentation and temporal affordance as independent variables and self-monitoring as a covariate. The interaction between personality self-presentation and temporal affordance remained significant without gender and completion time as covariates, $F(1, 244) = 4.02$, $p = .05$, partial $\eta^2 = .02$. However, the interaction effect no longer reached statistical significance when we conducted an analysis of variance (ANOVA) by excluding self-monitoring as a covariate in addition to gender and completion time, $F(1, 245) = 4.86$, $p = .12$, partial $\eta^2 = .01$.

Discussion

The present study is the first to explore the interaction effect of self-presentation and temporal affordances on self-concept. In so doing, we examined two competing hypotheses drawn from public commitment (*H1a*) and self-symbolizing (*H1b*), respectively. The findings lend support to the self-symbolizing perspective by showing that the internalization of the

presented self was facilitated when the self-presentation is enacted on ephemeral social media well-suited for nonstrategic self-presentation and true self-expression. Furthermore, such a difference in internalization between the ephemeral and permanent conditions was largely triggered by the introverted self-presentation.

Theoretical implications and contributions

Several theoretical implications can be drawn from the current findings. Most importantly, our critical test of two rival-theory based hypotheses contributes to the online self-concept change literature by bringing forth self-symbolizing as an important mechanism, which is largely overlooked in previous studies. Prior work on self-concept change was mostly based on the assumption that individuals are highly attentive to their audience when engaging in self-presentation behaviors. For example, previous studies have demonstrated that not only the commitment to the imagined audience induces internalization of the presented self (Gonzales and Hancock, 2008; Lane et al., 2019), but also, the feedback from the audience amplifies internalization (Carr and Foreman, 2016; Carr and Hayes, 2019; Walther et al., 2011). This concentrated focus on the audience factor and the public commitment framework stems from modern day social psychology which emphasizes strategic self-presentation driven by impression management concerns. However, as noted in the literature on self-symbolizing, individuals may want their self-symbolizing efforts to be noticed by others to acquire a sense of possessing the projected self-concept, but the impact of the audience may be marginal if their motivation is largely derived from the commitment to self-concept attainment. Adopting the self-symbolizing framework may help researchers interpret null effects. For example, in a study conducted by Carr and Hayes (2019), the main effects of an audience feedback and self-presentation on self-concept change were not consistent across two studies. In the discussion, they attributed the inconsistent findings to small sample sizes and the artificiality of the experimental manipulation. However, the notion

of self-symbolizing suggests that this may be due to a general lack of sensitivity towards audience factors. Indeed, our experimental results also showed that, albeit performed publicly, the main effect of personality self-presentation on the self-ratings of sociability was not statistically significant. Had the presenters felt pressured to be consistent with commitment to the public as suggested by the public commitment perspective, there should have been a significant main effect of personality self-presentation. This suggests the possibility that the level of strategic concerns with the audience per se might have been very low across all conditions, which further highlights the usefulness of considering self-symbolizing as an alternative explanation. In a nutshell, participants may have regarded their self-presentation behaviors as self-constructive without much considerations about their imagined audience.

The findings of this study should be also interpreted in light of audience characteristics. In this study, the imagined audience were strangers, not known ties. On some platforms, this varies. For example, although Snapchat primarily consists of small, intimate networks (Xu et al. 2016), its users also post to complete strangers (McRoberts et al., 2017). Other platforms typically bring together multiple audiences and collapse them into single contexts–a phenomenon otherwise known as "context collapse" (boyd, 2002). Posting exclusively to strangers might have further facilitated self-constructive self-presentations, rather than strategic self-presentation, as no future interaction was expected with the audience. When the anticipation of future interaction is low, self-disclosure tends to be less deliberate and intentional (Gibbs et al., 2006). As such, the self-symbolizing perspective may be particularly applicable to self-presentations on social media with largely unknown contacts. Although past research has mostly focused on self-presentations to strangers, we acknowledge the possibility that the relationship people have with the audience may impact the relative strengths of the two proposed perspectives. Some studies hinted that tie strengths

may differentially impact self-presentation strategies (Tice et al., 1995) and self-concept change (Carr and Foreman, 2016). Building on this inaugural test of the two theories, a more systematic comparison between the two perspectives by varying the composition of audience may offer great insight.

The significant interaction effect between personality self-presentation and temporal affordances found in this study not only lends credence to a prediction based on the notion of self-symbolizing, but also shows that a certain type of affordances may be more efficacious for a sense of self-concept attainment than other affordances. The findings showed that the internalization of a presented self was evident on ephemeral social media, but not on permanent social media. As predicted, participants may have taken full advantage of ephemerality for their self-concept constructing efforts which affords nonstrategic self-presentations by lowering the visibility of content to audiences and the interactivity with them. This may have contributed to a greater sense of possessing the intended self-concept. By identifying ephemerality as the condition that facilitates the internalization process, we provided empirical support for the importance of social media affordances in self-effects recently suggested by communication scholarship (Valkenburg, 2017). Future research may assess the level of impression management concerns and investigate its mediating role to explicitly test the proposed mechanisms. The direct measurement of this core construct will shore up the theoretically driven explanations as to why the greater internalization takes place on ephemeral social media. In particular, varying the amount of time a post lasts and the intensity of the tie to the audience are likely to be valuable routes for more nuanced research.

Moreover, this study showed that not all self-presentations are subject to the influence of temporal affordance, thereby identifying critical boundary conditions. By comparing the introverted and extraverted self-presentations within each interpersonal context (public versus private condition), previous studies have shown that people tend to

internalize their publicly presented selves, whether it be introverted or extraverted self-presentation (Gonzales and Hancock, 2008; Tice, 1992). In order to obtain a more nuanced understanding of the observed effects, we further decomposed the interaction effect for each personality self-presentation condition. Interestingly, we found that the difference between the two temporal conditions was only significant for those who engaged in introverted self-presentations. This finding corroborates our reasoning because it is more likely that people regard introverted personality as their true selves that they want to conceal from others compared to extraverted personality. As conceptualized by Rogers (1951), true self refers to a hidden aspect of the self that are rarely expressed to the public due to the concern for others' judgment. Although both extraversion and introversion can be one's true self, it is more likely that people would feel unsure about how others will judge their introverted aspects and try to conceal them from the public. This is because introversion is often mistakenly regarded as an undesirable personality trait associated with antisocial tendencies, loneliness, and even depression (Helgoe, 2013). However, as the notion of self-symbolizing suggests, people are still motivated to make this important aspect of themselves—introverted self as a true self—a "social reality" and ephemeral social media serves as a venue for satisfying their motivation.

This result opens up new vistas for research on self-concept change. Future research might consider parsing out the different types of self-presentations when examining the link among self-presentation, affordances, and self-concept change. Also, future research might interpret findings in reference to personality differences across several social media platforms. For example, Taber and Whittaker (2018) found that people were more extraverted and open on Snapchat than they were on Facebook. In light of our findings, it can be inferred that although people appear largely extraverted on Snapchat, the extent to which they internalize their extraverted behaviors may not significantly differ from that of Facebook. Though it may be less frequent, introverted behaviors on Snapchat may be internalized more than on Facebook.

Lastly, the current study advances our understanding of ephemerality, which is a relatively new social media affordance that communication scholars have just scratched the surface. Mostly focusing on Snapchat, previous studies have suggested that the user experience and perceptions of ephemeral social media differ from those of other platforms in terms of usage patterns (Piwek and Joinson, 2015), motives and psychological effects (Utz et al., 2015), and social interactions (Bayer et al., 2015). This study extends earlier work by showing that permanence and ephemerality may lead to a meaningful difference in self-concept modification. More importantly, this study expands on the work of scholars who have mostly focused on what dimension of self-concept (i.e., ideal vs. actual vs. true self) people present on social media platforms with different time-based features (Choi and Sung, 2018; Fox et al., 2018). This study takes this work a step further by showing the downstream psychological effects of self-presentation on the way the presenters view themselves. Continued efforts are needed to enrich the understanding of how the process of message creation on ephemeral social media would influence message creators themselves (i.e., self-effects) by, for example, identifying underlying mechanisms and by considering individual differences that would amplify or attenuate self-effects.

Limitations and future directions

Although the present study advances our understanding of how self-presentation and temporal affordance jointly influence self-concept, some limitations deserve note. First, the size for the interaction effect between self-presentation and temporal affordance was small and *p*-values close to the .05 threshold. Although our findings suggest that ephemerality enhances self-symbolizing efforts, the instructed self-presentations in an experimental setting might have reduced the overall level of motivation to engage in self-symbolizing efforts. Experiments favor internal over external validity, and certainly, instructed self-presentation could be different from spontaneous self-presentation in real life. In real-life settings, it is

also probable that people may self-select themselves into a certain platform and this may affect the strength of internalization. For example, some people may intentionally choose a more permanent social media platform when they desire greater public commitment and attitudinal/behavioral change by exposing themselves to a larger audience. In turn, they may indeed experience greater commitment as a result of self-selection. However, this possibility was not fully addressed in the experimental design, which may have affected the result. Moreover, it is difficult to rule out impression management concerns completely in the ephemeral condition with a 24-hour Story format. McRoberts et al. (2017) noted that Stories is neither a venue for a polished front stage nor a rehearsal back stage, whereas content sharing for a few seconds is closer to a back stage experience with greater anonymity (see Goffman, 1959). Therefore, the difference between the two temporal conditions in self-concept change might have turned out less apparent than initially expected. Future studies may consider adopting complementary methodologies to address this limitation. For example, researchers may conduct interviews targeting users of ephemeral social media and/or panel surveys that include the measurement of self-presentation motivations on social media.

However, this small effect can be meaningful when the potentially cumulative effect is considered. If individuals project a certain facet of their self-concepts consistently and repeatedly over time on social media, it may lead to a subtle, gradual change in the way they view themselves. Therefore, the small effect should not be simply ignored, but rather, should be interpreted appropriately. Meanwhile, the observed small effect per se may be indicative of relatively stable nature of self-concept. Albeit malleable to the changes in context (Banaji and Prentice, 1994), self-concept may be less responsive to short-term manipulations. Indeed, small to modest effect sizes have been often mentioned as limitations in experimental studies (Carr and Foreman, 2016; Carr and Hayes, 2019; Walther et al., 2011). All experiments have validity tradeoffs, and here the built-in irony is that one single study of time needs to be

studied at other time intervals to increase the ecological validity of the results. Future research can help round out this dimension.

In addition, our supplementary analyses showed that the significant interaction effect between personality self-presentation and temporal affordance observed in the main analyses did not hold up when self-monitoring was not controlled for. This indicates that an individual difference in self-monitoring is indeed an important predictor of the internalization of behavior, and thus, calls for future research to further investigate the role of self-monitoring in self-concept change in relation to the two proposed mechanisms. For example, it is plausible that high self-monitors might internalize more on permanent social media because they are more sensitive to others and adapt their behaviors accordingly, which dovetails nicely with the public commitment perspective. In contrast, the internalization of true self-expressions on ephemeral social media may be more apparent among those with a low level of self-monitoring as they are less sensitive and responsive to audience factors, thereby lending credence to the self-symbolizing perspective. Thus, future research should introduce self-monitoring as a factor rather than as a covariate in their study design to explore how such an individual difference contributes to self-concept modification by changing the relative importance placed on the two mechanisms at play.

Another limitation concerns the type of self-presentation performed. First, this study asked participants to engage in a textual self-presentation. However, in real life, social media that adopt ephemerality in their designs such as Snapchat and Instagram are largely image-driven. Therefore, to enhance the external validity of the current findings, future studies need to replicate and extend this study by employing visual self-presentations. Second, we manipulated self-presentation in terms of personality traits–extraversion and introversion. Though this practice is common in the extant self-concept change research, the observed effects need further probing by utilizing other facets of self-concept. Self-presentation

manipulation with the ideal versus true self typologies, for example, may better explicate the role of social media affordances in the internalization process.

This study is also limited due to the characteristics of the sample. There were relatively more females in our sample. Although we statistically controlled for gender in our analyses, future research would benefit by incorporating gender quota to enhance generalizability. In addition, the sample was comprised of young adults. We focused only on young adults to reflect the actual demographics of ephemeral social media; other age groups who may not have much prior experience with ephemeral social media would also conceive of ephemeral social media as well-suited for true self-expression and internalize their presented self. It is also possible that older cohorts may have a different set of self-perception given their later stages of development (Erikson, 1968). Therefore, future research would also benefit by replicating this study using other age groups to explore if such media perceptions can be developed during self-presentation on ephemeral social media, and if so, whether it produces similar effects on self-concept change.

Conclusion

When the permanence was a default affordance, social media platforms were generally viewed as a venue for strategic self-presentation, where people frequently engage in impression management by selectively presenting their idealized selves. However, the newly introduced affordance, ephemerality, seems to provide an arena for self-constructive and nonstrategic self-presentation, where people feel comfortable expressing their authentic and true selves with fewer concerns with the audience. While more follow-up research is needed, our findings suggest that such revelations of the true self are more likely to be internalized when they are performed on ephemeral social media as it strengthens self-symbolizing efforts and the subsequent attainment of the intended self-concept.

References

Banaji MR and Prentice DA (1994) The self in social contexts. *Annual Review of Psychology* 45(1): 297–332.

Bargh JA, McKenna KY and Fitzsimons GM (2002) Can you see the real me? Activation and expression of the "true self" on the Internet. *Journal of Social Issues* 58(1): 33–48.

Baumeister RF (1998) The self. In: Gilbert DT, Fiske ST and Lindzey G. (eds) *Handbook of Social Psychology*. New York: McGraw-Hill, pp.680–740.

Bayer JB, Ellison NB, Schoenebeck SY, et al. (2015) Sharing the small moments: ephemeral social interaction on Snapchat. *Information, Communication & Society* 19(7): 956–977.

Boas TC, Christenson DP and Glick DM (2018) Recruiting large online samples in the United States and India: Facebook, Mechanical Turk, and Qualtrics. *Political Science Research and Methods* 8(2): 1–19.

boyd D (2002) *Faceted id/entity: Managing representation in a digital world*. Cambridge, MA: Massachusetts Institute of Technology.

boyd D (2010) Social network sites as networked publics: Affordances, dynamics, and implications. In: Papacharissi Z (ed) *A Networked Self: Identity, Community, and Culture on Social Network Sites*. New York: Routledge, pp.47–66.

Carr CT and Foreman AC (2016) Identity shift III: Effects of publicness of feedback and relational closeness in computer-mediated communication. *Media Psychology* 19(2): 334–358.

Carr CT and Hayes RA (2019) Identity shift effects of self-presentation and confirmatory and disconfirmatory feedback on self-perceptions of brand identification. *Media Psychology* 22(3): 418–444.

Cheek JM and Buss AH (1981) Shyness and sociability. *Journal of Personality and Social Psychology* 41(2): 330–339.

Choi TR and Sung Y (2018) Instagram versus Snapchat: Self-expression and privacy concern on social media. *Telematics and Informatics* 35(8): 2289–2298.

Cialdini R (1993) *Influence - The psychology of persuasion*. New York: Quill William Morrow.

Ellison N, Heino R and Gibbs J (2006) Managing impressions online: Self-presentation processes in the online dating environment. *Journal of Computer-Mediated Communication* 11(2): 415–441.

Erikson EH (1968) *Identity: Youth and crisis*. New York: Norton.

Fazio RH, Effrein EA and Falender VJ (1981) Self-perceptions following social interaction. *Journal of Personality and Social Psychology* 41(2): 232–242.

Festinger L (1957) *A theory of cognitive dissonance*. Stanford, CA: Stanford University Press.

Fox AK, Bacile TJ, Nakhata C, et al. (2018) Selfie-marketing: exploring narcissism and self-concept in visual user-generated content on social media. *Journal of Consumer Marketing* 35(1): 11–21.

Fox J and McEwan B (2017) Distinguishing technologies for social interaction: The perceived social affordances of communication channels scale. *Communication Monographs* 84(3): 298–318.

Gibbs JL, Ellison NB and Heino, RD (2006) Self-presentation in online personals: The role of anticipated future interaction, self-disclosure, and perceived success in Internet dating. *Communication Research 33*(2): 152–177.

Goffman E (1959) *The presentation of self in everyday life.* New York: Anchor.

Gollwitzer PM (1986) Striving for specific identities: The social reality of self-symbolizing. In: Baumeister R (ed.). *Public Self and Private Self*. New York: Springer, pp.143–159.

Gollwitzer, PM, Sheeran, P, Michalski, V, et al. (2009) When intentions go public: Does social reality widen the intention-behavior gap?. *Psychological Science* 20(5): 612–618.

Gollwitzer, PM and Wicklund RA (1985) Self-symbolizing and the neglect of others' perspectives. *Journal of Personality and Social Psychology* 48(3): 702–715.

Gollwitzer, PM, Wicklund RA and Hilton JL (1982) Admission of failure and symbolic self-completion: Extending Lewinian theory. *Journal of Personality and Social Psychology* 43(2): 358–371.

Gonzales AL and Hancock JT (2008) Identity shift in computer-mediated environments. *Media Psychology* 11(2): 167–185.

Helgoe L (2008) *Introvert power: Why your inner life is your hidden strength.* Naperville, IL: Sourcebooks.

Herhold K (2019) How people interact on social media in 2019. *The Manifest*. 17 January. Available at: https://themanifest.com/social-media/how-people-interact-social-media

Higgins ET (1987) Self-discrepancy theory. *Psychological Review* 94: 1120-1134.

Hu C, Kumar S, Huang, J, et al. (2019) The expression of the true self in the online world: a literature review. *Behaviour & Information Technology*, 1–11.

Jones EE, Rhodewalt F, Berglas S, et al. (1981) Effects of strategic self-presentation on subsequent self-esteem. *Journal of Personality and Social Psychology* 41(3): 407–421.

Lane DS, Lee SS, Liang F, et al. (2019) Social media expression and the political self. *Journal of Communication* 69(1): 49–72.

Lennox RD and Wolfe RN (1984) Revision of the self-monitoring scale. *Journal of Personality and Social Psychology* 46: 1349–1364.

Lucas RE and Diener E (2001) Extraversion. In: Smelser NJ and Baltes PB (eds) *International Encyclopedia of the Social and Behavioral Sciences.* Amsterdam: Elsevier Science Publishers, pp.5202–5205.

Markus H and Kunda Z (1986) Stability and malleability of the self-concept. *Journal of Personality and Social Psychology* 51(4): 858–866.

Markus H and Wurf E (1987) The dynamic self-concept: A social psychological perspective. *Annual Review of Psychology* 38(1): 299–337.

McRoberts S, Ma H, Hall A, et al. (2017) Share first, save later: Performance of self through Snapchat stories. *Proceedings of the 2017 CHI conference on human factors in computing systems*, Denver, USA, 25–30 May.

Nadkarni A and Hofmann SG (2012) Why do people use Facebook? *Personality and Individual Differences* 52(3): 243–249.

Norman DA (1988) *The psychology of everyday things*. New York: Basic Books.

Pennebaker JW, Booth RJ, Boyd RL, et al. (2015) *Linguistic Inquiry and Word Count: LIWC2015*. Austin, TX: Pennebaker Conglomerates (www.LIWC.net).

Piwek L and Joinson A (2016) "What do they snapchat about?" Patterns of use in time-limited instant messaging service. *Computers in Human Behavior* 54: 358–367.

Reips UD (2002) Standards for Internet-based experimenting. *Experimental Psychology* 49(4): 243–256.

Rogers C (1951) *Client-centered therapy.* Boston: Houghton-Mifflin.

Schlenker BR, Dlugolecki DW and Doherty K (1994) The impact of self-presentations on self-appraisals and behavior: The power of public commitment. *Personality and Social Psychology Bulletin* 20(1): 20–33.

Schlenker BR and Weigold MF (1992) Interpersonal processes involving impression regulation and management. *Annual Review of Psychology* 43(1): 133–168.

Schlenker BR and Wowra SA (2003) Carryover effects of feeling socially transparent or impenetrable on strategic self-presentation. *Journal of Personality and Social Psychology* 85(5): 871–880.

Schwartz HA, Eichstaedt JC, Kern ML, et al. (2013) Personality, gender, and age in the language of social media: The open-vocabulary approach. *PloS one* 8(9): e73791.

Smith A and Anderson M (2018) Social media use in 2019. *Pew Research Center*. 1 March. Available at: https://www.pewinternet.org/2018/03/01/social-media-use-in-2018/

Statista (2019a) Distribution of Instagram users worldwide as of July 2019, by age group. Available at: https://www.statista.com/statistics/325587/instagram-global-age-group/

Statista (2019b) Distribution of Snapchat users worldwide as of July 2019, by age and gender. Available at: https://www.statista.com/statistics/933948/snapchat-global-user-age-distribution/

Taber L and Whittaker S (2018) Personality depends on the medium: Differences in self-perception on Snapchat, Facebook and online. *Proceedings of the 2020 CHI conference on human factors in computing systems*, Montréal, Canada, 21–26 April.

Tice DM (1992) Self-concept change and self-presentation: The looking glass self is also a magnifying glass. *Journal of Personality and Social Psychology* 63(3): 435–451.

Tice DM, Butler JL, Muraven MB, et al. (1995) When modesty prevails: Differential favorability of self-presentation to friends and strangers. *Journal of Personality and Social Psychology* 69(6): 1120–1138.

Treem JW and Leonardi PM (2013) Social media use in organizations: Exploring the affordances of visibility, editability, persistence, and association. *Annals of the International Communication Association* 36(1): 143–189.

Triệu, P and Baym, NK (2020) Private responses for public sharing: Understanding self-presentation and relational maintenance via stories in social media. *Proceedings of the 2020 CHI conference on human factors in computing systems*, Honolulu, USA, 25–30 April.

Utz S, Muscanell N and Khalid C (2015) Snapchat elicits more jealousy than Facebook: A comparison of Snapchat and Facebook use. *Cyberpsychology, Behavior, and Social Networking* 18(3): 141–146.

Valkenburg PM (2017) Understanding Self-Effects in Social Media. *Human Communication Research* 43(4): 477–490.

Valkenburg PM, Peter J and Walther JB (2016) Media effects: Theory and research. *Annual Review of Psychology* 67(1): 315–338.

Valkenburg PM and Piotrowski J (2016) *Plugged in: How media attract and affect youth.* New Haven, CT: Yale University Press.

Walther JB (2007) Selective self-presentation in computer-mediated communication: Hyperpersonal dimensions of technology, language, and cognition. *Computers in Human Behavior* 23(5): 2538–2557

Walther JB, Liang YJ, DeAndrea DC, et al. (2011) The effect of feedback on identity shift in computer-mediated communication. *Media Psychology* 14(1): 1–26.

Wicklund RA and Gollwitzer PM (1982) *Symbolic self-completion*. Hillsdale, NJ: Erlbaum.

Xu B, Chang P, Welker CL, et al. (2016) Automatic archiving versus default deletion: What Snapchat tells us about ephemerality in design. *Proceedings of the 19th ACM conference on computer-supported cooperative work and social computing*, San Francisco, USA, 27 February–2 March.

Yarkoni T (2010) Personality in 100,000 words: A large-scale analysis of personality and word use among bloggers. *Journal of Research in Personality* 44(3): 363–373.

Zhao S, Grasmuck S and Martin J (2008) Identity construction on Facebook: Digital

empowerment in anchored relationships. *Computers in Human Behavior* 24(5): 1816–

1836.

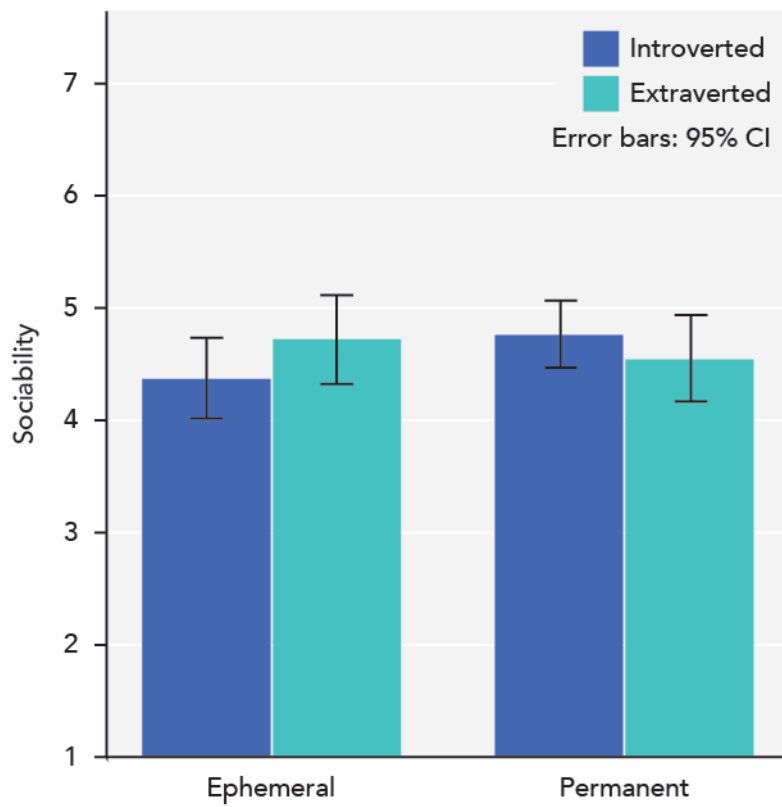Figure 1. Screenshots of the Daily Raily interfaces.

Figure 2. Interaction between personality self-presentation and temporal affordance.

Authors' note

All authors have agreed to the submission of this article and it is not currently being considered for publication by any other print or electronic journal.

Author biographies

Sukyoung Choi (MA, Seoul National University) is a doctoral student at the Annenberg School for Communication at the University of Southern California. Her research interest lies in understanding the social/political implications of artificial intelligence and social psychological processes in social media and online games.

Dmitri Williams (PhD, University of Michigan) is an Associate Professor at the Annenberg School for Communication at the University of Southern California. His work focuses on communication, technology, and social capital using a systems lens. He has an emphasis on video games, analytics, and large-scale data.

Hyeok Kim (MA, Seoul National University) is a doctoral student in the Department of Computer Science at Northwestern University. His research interest includes automated visualization design recommendation and visual message preservation.