Temporary sharing prompts unrestrained disclosures that leave lasting negative impressions

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With the advent of social media, the impressions people make on others are based increasingly on their digital disclosures. However, digital disclosures can come back to haunt, making it challenging for people to manage the impressions they make. In field and online experiments in which participants take, share, and evaluate self-photographs ("selfies"), we show that, paradoxically, these challenges can be exacerbated by temporary-sharing media—technologies that prevent content from being stored permanently. Relative to permanent sharing, temporary sharing affects both whether and what people reveal. Specifically, temporary sharing increases compliance with the request to take a selfie (study 1) and induces greater disclosure risks (i.e., people exhibit greater disinhibition in their selfies, studies 1 and 2). This increased disclosure is driven by reduced privacy concerns (study 2). However, observers' impressions of sharers are insensitive to permanence (i.e., whether the selfie was shared temporarily versus permanently) and are instead driven by the disinhibition exhibited in the selfie (studies 4–7). As a result, induced by the promise of temporary sharing, sharers of uninhibited selfies come across as having worse judgment than those who share relatively discreet selfies (studies 1, 2, and 4–7)—an attributional pattern that is unanticipated by sharers (study 3), that persists days after the selfie has disappeared (study 5), is robust to personal experience with temporary sharing (studies 6A and 6B), and holds even among friends (studies 7A and 7B). Temporary sharing may bring back forgetting, but not without introducing new (self-presentational) challenges.

disclosure | privacy | self-presentation | impression formation | social media

With the advent of social media, the impressions people make on others are based increasingly on their digital disclosures. Facebook alone has 1.86 billion active users who collectively post 136,000 photographs, 293,000 status updates, and 510,000 comments every minute (1), amounting to 4.75 billion pieces of content shared daily. Usage has been ever increasing, with 2016 representing a 15% increase from the year prior. People seem enamored with sharing photographs in particular; Instagram's more than 400 million users post more than 80 million photographs each day (2).

Relative to traditional, offline forms of communication, there is an enhanced permanence to digital sharing. Disclosures are forever cataloged in the cloud, and, in the case of Tweets, also in the Library of Congress. Although individual offending posts can be deleted, it is all but impossible to expunge their every trace. Digital media content can be disseminated broadly—to friends, acquaintances, and strangers alike—with the click of a button. In turn, these audiences can effortlessly transmit this content to others. Moreover, it is often the most regrettable disclosures—compromising photographs posted in the heat of the moment—that are ripe for sharing and so perhaps are the hardest to undo.

The effective impossibility of undoing online disclosures presents new challenges to individuals in the digital age, especially when it comes to managing the impressions they make (3). Disclosures can come back to haunt, even those that seemingly disappear seconds after first exposure. In one case, flight attendants were fired for posting derogatory comments about their employer (4). In fact, a recent poll indicated that 93% of hiring managers check candidates' social media activity, with the discovered information often hindering the chance of getting hired (5).

Given these dangers, one might wonder why people share in the first place. One reason is that self-disclosure confers benefits. Confiding in others is associated with better health (6) and professional benefits. Also, perhaps because it is a means of achieving connection with others—a fundamental human motivation (7)—self-disclosure confers psychological benefits, such as intimacy (8, 9) and liking (10, 11). Moreover, neuroscientific research suggests self-disclosure is intrinsically rewarding (12). However, people also have a desire for privacy (13, 14) and for good reason: Privacy is integral to human development (15). Because these desires—the desire for privacy and the desire to disclose—often run in opposition, honoring both simultaneously is a challenge, especially given the permanence of digital disclosures.

Enter temporary sharing: New technologies that place expiration dates on disclosures may help resolve the tension (16, 17). Snapchat, the photograph-sharing application (hereafter, "app") wherein photographs and messages disappear after the recipient has viewed them has more than 150 million daily users (18). Facebook and Instagram also have popular temporary-sharing features; for example, Instagram Stories, on which posts automatically vanish after 24 h, has more than 250 million daily users (19, 20). From a narrow perspective, these technologies would seem to be a panacea, honoring both the desire to divulge and the desire for privacy. After all, content that no longer exists cannot come back to haunt.

Or can it? A broader, behavioral scientific perspective suggests that temporary sharing may not be the cure-all that it may seem to be. Impressions are sticky (21, 22), even when incorrect. Thus, an indiscreet, temporarily shared photograph may make an impression that persists beyond its short life. Moreover, observers may attribute the indiscretion to the (bad) judgment of the sharer

Significance

Relative to traditional, offline forms of communication, there is an enhanced permanence to digital sharing. Digital disclosures can come back to haunt, making it challenging for people to manage the impressions they make upon others. Nine studies show that, paradoxically, these challenges can be exacerbated by temporary-sharing technologies. Temporary sharing reduces privacy concerns, in turn increasing disclosure of potentially compromising information (in the form of uninhibited selfies). Recipients attribute these indiscretions to sharers' bad judgment, failing to appreciate the situational influence—the temporariness of the sharing platform—on sharers' disclosures. Sharers do not anticipate this consequence, mistakenly believing that recipients will attribute their disclosure decisions to the (temporary) platform on which they chose to send the photographs.

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rather than being warranted by the temporariness of the sharing platform. Indeed social psychologists have documented an actor–observer asymmetry in attribution: Observers tend to attribute behavior to actors' enduring personality characteristics as opposed to situational influences; actors tend to do the opposite (23–28). Therefore, people's impressions of sharers may be driven by the content of the photograph and not by sharers' choice of sharing medium. This attribution pattern would pose a challenge in self-presentation via temporary sharing media, especially if the attribution by observers is unanticipated by sharers. Potentially compounding this issue, ephemerality, in its capacity to assuage privacy concerns, may increase disclosure, and of sensitive information in particular (13, 29). Consistent with this idea, computer-mediated settings, which feel private, in part because they reduce feelings of public self-consciousness, increase self-disclosure and decrease socially desirable responses (30–33).

We test this account in an experimental paradigm in which participants were asked to take and share a "selfie" (a photograph of themselves, taken by themselves), expecting others to view it. The present research therefore also contributes to the emergent science of the psychology of photo-taking (34, 35). We focus on the sharing of visual content (selfies) both because of its pervasiveness and because impressions are strongly affected by appearance. However, our predictions and their theoretical underpinnings also apply to other types of disclosures (e.g., text-based disclosures such as status updates, video posts, and so forth).

First, we predict that, relative to permanent sharing, temporary sharing affects both whether and what people reveal. Specifically, we predict that temporary sharing increases compliance with the request to take a selfie (hypothesis 1a, study 1) and causes people to take greater disclosure risks, which we operationalize by the disinhibition they exhibit in their selfies (hypothesis 1b, studies 1 and 2). Second, we predict that this increased disclosure is driven by reduced privacy concerns (hypothesis 2, study 2). Third, we predict observers' impressions of sharers are based on the uninhibitedness of the selfie and are insensitive to permanence (i.e., whether the selfie was shared temporarily or permanently) (hypothesis 3, study 4). As a result, sharers of uninhibited selfies, induced by the promise of temporary sharing, will come across as having worse judgment than those who share relatively discreet selfies (hypothesis 4, studies 1, 2, and 4–7). Finally, we predict that this attributional pattern will be (*i*) unanticipated by sharers (hypothesis 5a, study 3); (*ii*) persistent after the selfie has disappeared (hypothesis 5b, study 5); (*iii*) robust to personal experience with temporary sharing (hypothesis 5c, studies 6A and 6B); and (*iv*) manifest even among friends (hypothesis 5d, studies 7A and 7B).

Results and Discussion

Study 1 was a field study that tested whether temporariness impacts disclosure (hypotheses 1a and b) and the impressions made upon others. Two research assistants approached people ($n = 296$; mean age = 25 y, SD = 5.4 y; 55% female) on a university campus, alternating in the use of a temporary-sharing vs. control solicitation script. The people were asked to take and share a selfie using a "Moment Machine" (36, 37)—a networked display application that allows passersby to take a photograph that is displayed on monitors across campus. Participants were made aware that their selfies would be posted on the monitors and on a publically accessible Facebook page. Those in the temporary condition were further informed, truthfully, that selfies would be posted temporarily, for 1 h. After data collection, research assistants coded the selfies for disinhibition and rated the sharers' judgment. The procedural details, manipulations, measures, comprehension checks, pretests, and data exclusions for all studies are outlined in *Materials and Methods*.

Temporary sharing made people 1.2 times more likely to take and share a selfie relative to those in the control condition [compliance: 70.00% in temporary vs. 57.55% in control, $\chi^2(1) = 4.85$, $P < 0.05$]. As for photograph content, an intent-to-treat analysis including participants who did not take a selfie indicated that temporariness made people 3.44 times more likely to take uninhibited selfies relative to the control condition [$\text{mean}_{\text{temporary}} = 52.00\%$ vs. $\text{mean}_{\text{control}} = 15.11\%$, $\chi^2(1) = 43.60$, $P < 0.005$, Cohen's $d = 0.84$, 95% CI (0.60, 1.08)]. There were various subtypes of uninhibited photographs: 71% contained a hand gesture; 28% had an unusual or silly face; 13% used a prop; 5% depicted unrestrained actions.

Temporary sharers were perceived as having worse judgment ($\text{mean}_{\text{temporary}} = 3.00$, SD = 1.02) than those in the control condition [$\text{mean}_{\text{control}} = 3.88$, SD = 0.98, $F(1, 183) = 34.86$, $P < 0.005$, Cohen's $d = -0.87$, 95% CI (−0.57, −1.18)]. Selfies from the temporary condition were also rated more likely to go viral [$\text{mean}_{\text{temporary}} = 2.79$, SD = 0.90 vs. $\text{mean}_{\text{control}} = 2.21$, SD = 0.78; $F(1, 183) = 20.71$, $P < 0.005$]. To the extent that it is possible to "hack" temporary sharing (e.g., by taking a screenshot on Snapchat), this pattern implies an irony: Content that makes a person come across as having bad judgment may be particularly prone to being shared by others.

Study 2 was an online experiment in which we tested a mechanism hypothesized to underlie the disinhibition prompted by temporary sharing: dampened privacy concerns (hypothesis 2). Study 2 also featured several procedural enhancements relative to study 1: first, before taking a selfie, sharers were made explicitly aware that others from the same population would rate them based on their selfie. Second, we designed the experiment to induce equal selfie-sharing compliance across conditions, enabling us to document observers' impressions of sharers with greater internal validity. As a result, we necessarily focused on the nature of the selfie shared (i.e., testing hypothesis 1b, whereas study 1 was optimized to test hypothesis 1a). Third, we obtained quality-of-judgment ratings from a larger sample of observers.

Participants [$n = 428$ US users of the Amazon Mechanical Turk website (hereafter "MTurkers"); mean age = 33 y, SD = 10.2 y; 42% female] took and shared a selfie via their webcams. Before they did so, we told them that other MTurkers would rate their photographs, randomizing whether we told participants that the photograph would be available temporarily or permanently. Next, participants reported their privacy concerns and then took and shared a selfie. Compliance was high and equal across conditions: 74.64% in the permanent-sharing condition, 76.26% in the temporary-sharing condition; $\chi^2(1) = 0.15$, not significant (NS). The selfies were coded for disinhibition as in study 1. A separate group of MTurkers ($n = 71$) rated the sharers' judgment.

An intent-to-treat analysis indicated that participants were 1.52 times more likely to depict disinhibition in the temporary-sharing condition than in the permanent condition [$\text{mean}_{\text{temporary}} = 45.21\%$ vs. $\text{mean}_{\text{permanent}} = 29.67\%$, $\chi^2(1) = 11.01$, $P < 0.005$, Cohen's $d = 0.32$, 95% CI (0.13, 0.52)]. Privacy concerns mediated the relationship between temporary sharing and selfie disinhibition: Temporariness decreased privacy concerns ($\beta_{\text{temporary}} = -0.70$, SE = 0.22, $P < 0.005$), which in turn accounted for increased disinhibition ($\beta_{\text{privacy}} = -0.05$, SE = 0.01, $P < 0.005$). The bootstrapped indirect effect is significant: $\beta = 0.04$, 95% CI (0.01, 0.08), SE = 0.02. *Supporting Information* includes a conceptual replication of these findings (study S1). Content coding indicated that the uninhibited photographs contained an unusual or silly face (56%), a hand gesture (39%), prop use (24%), nudity (6%), and drug use (3%).

Temporary sharers were viewed as having worse judgment than permanent sharers [$\text{mean}_{\text{temporary}} = 3.59$, SD = 1.20; $\text{mean}_{\text{permanent}} = 3.93$, SD = 1.12, $t(321) = 2.68$, $P < 0.01$, Cohen's $d = -0.30$, 95% CI (−0.08, −0.52)]. This effect held when controlling for rater fixed effects ($\beta_{\text{temporary}} = -0.35$, cluster robust SE = 0.12, $P < 0.01$) and standardizing ratings within raters ($\beta_{\text{temporary}} = -0.27$, cluster robust SE = 0.08, $P < 0.005$).

Studies 1 and 2 show that temporary sharing dampens privacy concerns (hypothesis 2), increasing people's willingness to take and share selfies (hypothesis 1a) and to portray themselves as uninhibited in those selfies (hypothesis 1b). However, sharers of uninhibited selfies, induced by the promise of temporary sharing, came across as having worse judgment than those who shared relatively discreet selfies (hypothesis 4). Study 3 tested whether sharers anticipate these consequences (hypothesis 5a).

In study 3, participants (n = 200 US MTurkers, mean age = 37 y, SD = 12.5 y, 39% female) were randomized to imagine they were either about to share a selfie (sharers) or to receive a selfie from someone (observers). Participants were told that the selfie was risqué; it had a bit of nudity in it (see *Supporting Information* study S2 for a conceptual replication invoking a different, "very silly," selfie). Next, we described two possible platforms on which the selfie could be shared, differing in permanence (i.e., Snapchat vs. iMessage). Both sharers and observers were asked whether the sharer would make a better impression if they sent the selfie via Snapchat, via iMessage, or if the platform would not matter. In this and all subsequent studies, multiple-choice tests administered after the outcome measure confirmed that participants had noticed the condition-specific information (*Materials and Methods*).

Whereas most sharers (53.5%) believed sending the selfie via Snapchat would make the better impression, only 31.4% of observers agreed [$\chi^2(1) = 10.19$, $P < 0.005$]. In contrast to sharers' common intuition, observers most commonly indicated the platform would not matter (Fig. 1 and Fig. S1). Thus, study 3 suggests an actor-vs.-observer asymmetry: Sharers believe temporary sharing improves the impression they make on others (hypothesis 5a); observers believe their impression of sharers is unaffected by the platform.

Study 4 assessed the accuracy of these intuitions, testing whether observers temper their judgments of sharers when sharing is temporary (hypothesis 3). Although we obtained observers' impressions of the sharers in studies 1 and 2, unlike these studies, in study 4, observers were made aware of the platform—temporary vs. permanent—on which the selfie had been shared. Also, in study 4 we necessarily manipulated selfie disinhibition independently from temporariness.

Participants (n = 339, mean age = 26 y, SD = 5.1 y; 52% female) were students at the same university as in study 1 and were shown a selfie that another student had taken on the Moment Machine. We randomized whether participants (i) viewed an uninhibited selfie or a control selfie and (ii) were told that the sharer had posted it temporarily or permanently. The latter manipulation was pretested to ensure participants noticed this information. Participants rated the sharer's judgment.

Participants deemed sharers who appeared uninhibited as having worse judgment than those not appearing uninhibited [$\text{mean}_{\text{uninhibited}} = 3.68$, SD = 1.52; $\text{mean}_{\text{control}} = 4.50$, SD = 1.49, $F(1, 337) = 24.59$, $P < 0.005$, Cohen's $d = -0.54$, 95% CI (−0.32, −0.76)]. These judgments did not depend on the platform [$F(1, 335) = 0.05$, NS], and the effect held within the temporary-sharing condition [$\text{mean}_{\text{uninhibited}} = 3.71$, SD = 1.38; $\text{mean}_{\text{control}} = 4.48$, SD = 1.66), $t(145) = 3.01$, $P < 0.005$] (Fig. 2).

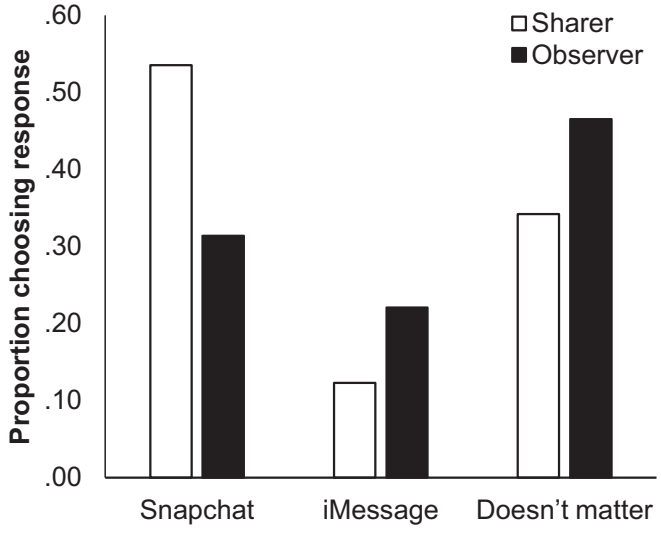

Fig. 1. Sharers commonly think they will make a better impression if they send an uninhibited selfie temporarily; observers think the platform temporariness does not matter (study 3). Bars sum to 1 within color.

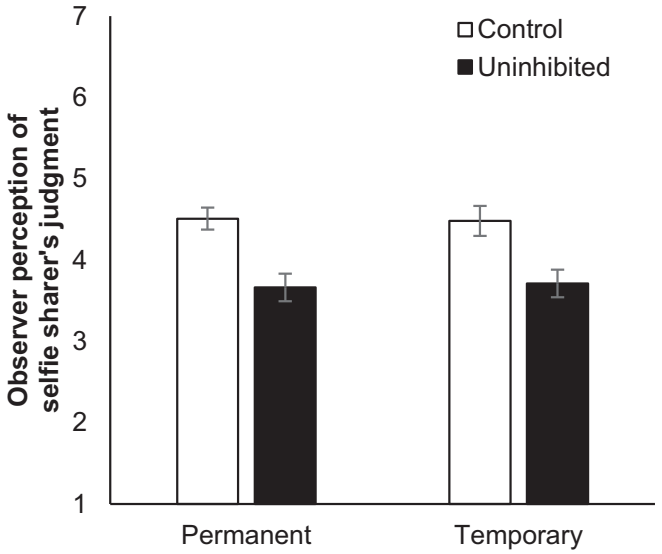

Fig. 2. Impressions of sharers are based on the content of the selfie and are insensitive to permanence (study 4). Error bars indicate SEMs.

Study 4 shows that observers' impressions of sharers are based on the uninhibitedness of the selfie and are insensitive to permanence (hypothesis 3), pointing to the inaccuracy of sharers' belief that others will view their disinhibition as appropriate for the ephemeral medium. A conceptual replication reported in the *Supporting Information* invoking a different platform (Instagram) showed the same result (study S3, Fig. S2). Study 5 tested whether a temporarily shared, uninhibited selfie makes an impression that persists beyond its brief life span (hypothesis 5b).

Study 5 was a longitudinal experiment spanning 3 d. On day one, participants (n = 403 US MTurkers; mean age = 36 y, SD = 11.6 y; 55% female) were randomized to view either an uninhibited or a control selfie, were told it had been shared temporarily via Instagram Stories, and rated the sharer's judgment. On the next 2 d, participants reevaluated the sharer, this time from memory (the selfie was not redisplayed). Participants were randomized to reevaluate on either day two or day three. Thus, each participant rated the sharer twice, once alongside the selfie on day one and again from memory either 1 or 2 d after exposure. Most participants (82.88%) completed the second evaluation (NS by condition).

Upon viewing the selfie, participants deemed sharers of uninhibited selfies as having worse judgment than those of control selfies [time 1: $\text{mean}_{\text{uninhibited}} = 3.52$, SD = 1.45; $\text{mean}_{\text{control}} = 4.91$, SD = 1.29), $t(401) = 10.21$, $P < 0.005$; $d = -1.02$ 95% CI (−0.81, −1.23)]. This effect held when participants later simply recalled their impression of the sharer, whether they did so 1 d later [time 2, day 2: $\text{mean}_{\text{uninhibited}} = 4.20$, SD = 1.45; $\text{mean}_{\text{control}} = 4.84$, SD = 1.13), $t(167) = 3.23$, $P < 0.005$] or 2 d later [time 2, day 3; $\text{mean}_{\text{uninhibited}} = 4.04$, SD = 1.30; $\text{mean}_{\text{control}} = 4.85$, SD = 1.15, $t(159) = 4.21$, $P < 0.005$]. Convergent results from more sophisticated regression analyses are given in *Supporting Information* and Table S1. The difference between impressions of sharers of uninhibited vs. not-uninhibited photographs attenuated between exposure and reevaluation, but the magnitude of this attenuation was equivalent whether reevaluation was 1 or 2 d after the initial exposure (Fig. 3). A conceptual replication of this study is given in *Supporting Information* (study S4, Fig. S3).

Study 5 suggests that the impression made by a temporarily shared uninhibited selfie persists beyond its short life (hypothesis 5b). Studies 6A and 6B tested whether observers' assessments of

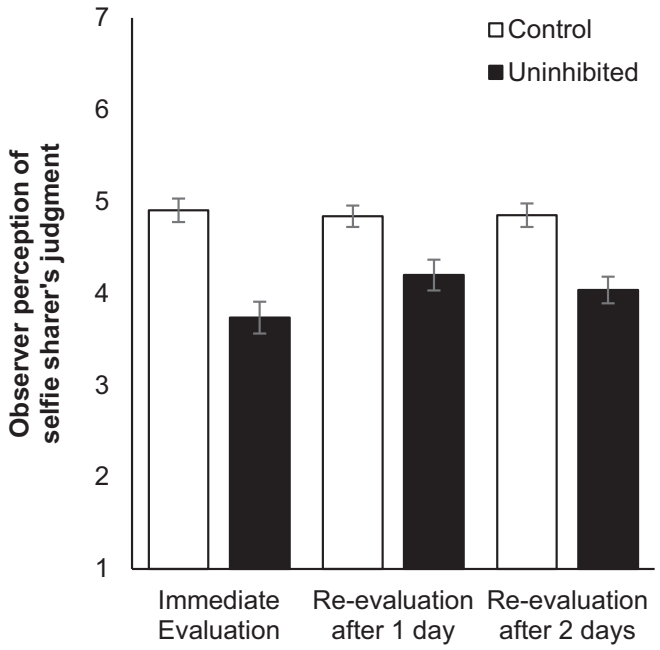

Fig. 3. The less-than-stellar impression that an uninhibited, although temporarily shared, selfie makes on others lasts beyond its short life span (study 5). Error bars indicate SEMs.

sharers' quality of judgment are tempered by personal experience with temporary sharing (hypothesis 5c).

In study 6A, we first described the temporary sharing features of Snapchat, Instagram, and Facebook and then asked participants (n = 400 US MTurkers, mean age = 36 y, SD = 11.5 y; 47.25% female) whether they had used such a feature (64.00% answered "yes"). Next, participants were randomized to view either an uninhibited selfie or a control selfie, were told that it had been shared temporarily, and rated the sharer's judgment. Replicating studies 4 and 5, participants deemed sharers who appeared uninhibited as having worse judgment than those not appearing uninhibited [$\text{mean}_{\text{uninhibited}}$ = 3.74, SD = 1.56; $\text{mean}_{\text{control}}$ = 5.01, SD = 1.34, $F(1, 398) = 77.23$, $P < 0.005$; Cohen's $d = -0.88$, 95% CI (−0.67, −1.09)]. These ratings were not tempered by experience with temporary sharing [$F(1, 396) = 0.45$, NS]; the effect held among those with such experience [$\text{mean}_{\text{uninhibited}}$ = 3.85, SD = 1.65; $\text{mean}_{\text{control}}$ = 5.05, SD = 1.37; $t(254) = 6.35$, $P < 0.005$].

Whereas study 6A measured experience with temporary sharing, study 6B (n = 396 US MTurkers, mean age = 33 y, SD = 9.2 y; 34% female) manipulated it: half of the participants were randomized to first upload and temporarily share a selfie. Most (82.90%) complied, although results are intent-to-treat. Next, participants were randomized to view either an uninhibited or a control selfie and were told that the sharer had posted it temporarily. Participants deemed sharers who appeared uninhibited as having worse judgment than those not appearing uninhibited [$\text{mean}_{\text{uninhibited}}$ = 4.00, SD = 1.72; $\text{mean}_{\text{control}}$ = 5.35, SD = 1.29, $F(1, 394) = 80.13$, $P < 0.005$; Cohen's $d = -0.90$, 95% CI (−0.69, −1.11)]. Replicating study 6A, these ratings were not tempered by experience with temporary sharing [$F(1, 392) = 0.80$, NS]; the effect held among those with such experience [$\text{mean}_{\text{uninhibited}}$ = 4.08, SD = 1.78; $\text{mean}_{\text{control}}$ = 5.30, SD = 1.30, $t(191) = 5.49$, $P < 0.005$].

Studies 6A and 6B suggest personal experience with temporary sharing does not lead observers to factor the situational influence—the ephemerality of the medium—into their impressions (hypothesis 5c). So far, our tests of hypotheses 4 and 5 featured observers evaluating potentially unknown fellow students (study 4) or strangers (studies 5 and 6), a common occurrence. Attesting to this point, we conducted surveys in which we asked people about their social media networks (*Supporting Information*). Results indicated that users frequently encounter posts from strangers (Fig. 4). Looking within each of the three top platforms, many have set their profiles to public (Snapchat: 29%; Facebook: 22%; Instagram: 58%). As for the composition of users' networks within each platform, a nontrivial proportion is comprised of strangers (Snapchat: 17%; Facebook: 38%; Instagram: 52%) in addition to acquaintances (Snapchat: 29%; Facebook: 40%; Instagram: 22%) and friends (Snapchat: 53%; Facebook: 22%; Instagram: 27%) (see Fig. S4).

Nonetheless, studies 7A and 7B answer two outstanding questions: whether people view sharers of uninhibited photographs as having bad judgment even when those sharers are friends and, if so, whether this effect holds when sharing takes place on temporary media (hypothesis 5d). These studies test the impact of two independent variables, sharer type (friend vs. stranger) and selfie type (degree of disinhibition), on perceived sharer judgment.

Study 7A employed a naturalistic setting in which Instagram users (n = 400 US MTurkers, mean age = 29 y, SD = 7.7 y; 61% female) rated someone who had temporarily shared a selfie on Instagram Stories. On Instagram, users can access most others' posts, enabling us to randomize participants to view a temporarily shared selfie of a stranger or a friend. The other independent variable was measured: Participants indicated the degree of disinhibition in the selfie. For the outcome measure, participants rated the sharer's judgment. Administration order was counterbalanced and did not matter. According to observers, the more uninhibited the sharer, the worse the sharer's perceived judgment ($\beta_{\text{uninhibited}} = -0.23$, SE = 0.07, $P <$ 0.005, Table S2, Model 2). This result did not depend on whether the sharer was a friend or stranger ($\beta_{\text{uninhibited} \times \text{friend}} = 0.02$, SE = 0.07, NS), although, perhaps not surprisingly, friends' judgment was rated higher than strangers' judgment ($\beta_{\text{friend}} = 0.21$, SE = 0.07, $P <$ 0.005). It also held after controlling for demographics (*Supporting Information* and Table S2, Model 3).

Whereas study 7A measured disinhibition, study 7B manipulated it. Participants (n = 499 US MTurkers, mean age = 34 y, SD = 9.8 y; 41% female) imagined they encountered a selfie temporarily shared by either that friend or a stranger that was either uninhibited or not uninhibited. Participants rated the sharer's judgment. Participants deemed sharers whom they supposed to have posted an uninhibited selfie as having worse judgment than those they supposed to have posted less uninhibited selfies [$\text{mean}_{\text{uninhibited}}$ = 4.33, SD = 1.24; $\text{mean}_{\text{control}}$ = 5.04, SD = 1.15, $F(1, 497) = 43.75$, $P < 0.005$; Cohen's $d = -0.59$, 95% CI (0.42, 0.77)]. Replicating study 7A, this pattern did not depend on friendship status [$F(1, 495) = 0.62$, NS], although friends were deemed to have better judgment than strangers [$\text{mean}_{\text{friend}}$ = 4.90, SD = 1.24; $\text{mean}_{\text{stranger}}$ = 4.48, SD = 1.21, $F(1, 497) = 15.35$, $P <$ 0.005]. Thus, although the psychology of first impressions differs from that of existing relationships (38), studies 7A and 7B suggest

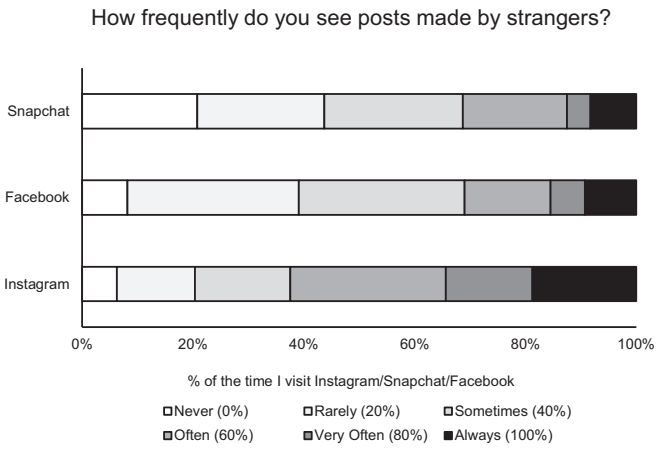

Fig. 4. Self-reported frequency of encountering strangers' posts.

that, at least in the domain of temporary sharing, both friends and strangers are penalized for uninhibited behavior.

Conclusion

People increasingly share personal information over social media platforms on which posts are only temporarily available. Such technologies would seem to be a panacea, simultaneously honoring two often-conflicting desires: the desire to disclose and the desire to protect one's privacy. The present research points to a different conclusion: Temporary sharing can exacerbate the challenge of self-presentation in the digital age.

We documented one psychological driver behind the capacity for temporary sharing to induce disclosure: dampened privacy concerns. Future research could explore additional, complementary mechanisms underlying this phenomenon. For example, the tendency to honor sunk costs (39, 40) could make a person who has decided to use a temporary-sharing medium feel compelled to "make good" on that choice by sharing content they would not dare to share permanently. Future research might also test whether our findings extend to situations in which people post information about others: If a person surreptitiously takes and shares (if only temporarily) a photograph of someone acting uninhibitedly, who suffers the judgment penalty—the sharer, or the unwitting subject of the photograph? (The latter, we suspect). We also explored one facet of self-presentation: perceived quality of judgment. In addition to exploring how temporary sharing affects the different dimensions on which a person is perceived (e.g., warmth, competence), future work might also explore how temporary, as opposed to permanent, platforms affect the sharer's enjoyment of that experience.

Given the documented pitfalls of temporary sharing, future research might explore other interventions designed to help people better manage the digital impressions they make—for example, by preventing people from making uninhibited disclosures in the first place. Cooling-off periods could be helpful in this respect: Users could opt-in to a feature that inserts a delay between the time when they press "post" and the time when that post appears (during that interval they could change their mind). For example, upon detecting inebriation, the "Drunk Text Savior" app disables texting, requiring would-be sharers to answer math questions correctly to restore functionality.

Relatedly, although social media are increasingly becoming broadcast tools, sharers do not always treat them as such, sometimes acting as if they are sending private letters when really the situation is more akin to sending postcards on which messages are in plain sight. By design, social media would seem to create an illusion of intimacy. It is as if, at the moment of divulgence, sharers have a specific target in mind—a person or group to whom they envision themselves to be disclosing—to the neglect of the truly broad scope of the audience. Embarrassment, or worse, can ensue. In one case, a Facebook user made a post complaining about her boss, forgetting that he was a Facebook friend; she was subsequently fired (41). Just-in-time interventions, delivered the moment before posting, could prompt users to consider audience scope (although they may introduce new issues, such as excessive self-censoring).

In sum, the use of temporary-sharing technologies does not, in and of itself, make a person come across as having bad judgment. Instead, it is the tendency for temporary sharing to induce risky disclosure (via assuaged privacy concerns), combined with the fact that observers' impressions of sharers are based on the way those sharers look in the photographs and are insensitive to sharing platform choice, that produces this pattern. Temporary sharing may bring back forgetting, but not without introducing new (self-presentational) challenges.

Materials and Methods

Informed consent was obtained from all participants, and the Institutional Review Boards of the Università della Svizzera Iaiana and Harvard University reviewed and approved the materials and procedures. Data collection-stopping rules were preset (*Supporting Information*). Stimuli and non-identifiable alphanumeric data are available at https://osf.io/qaw2v/.

Study 1.

Procedure. After sharing the selfie, participants completed a survey and were entered into an iPad raffle. The survey included demographics (as did all subsequent studies), a request for permission to use the selfie in follow-up studies (we excluded those who declined or took a photograph that was not a selfie, $n = 7$), and two additional measures (*Supporting Information*).

Selfie coding. Selfies including at least one of the following were coded as uninhibited: a silly or unusual face (e.g., sticking out the tongue); a hand gesture (e.g., a stranglehold); using an object as a prop (e.g., "attacking" the camera with an umbrella); unrestrained action shots (e.g., jumping); nudity; or drug use (smoking, drinking). Interrater agreement on the presence of disinhibition was 91% ($\kappa = 0.80$, $z = 13.71$, $P < 0.005$); disagreements were resolved by a third coder. Two other coders rated each sharer ("I think the person who shared the photograph has good judgment") on a scale of 1 (strongly disagree) to 5 (strongly agree) ($r = 0.40$, $P < 0.005$). We took the average of raters' assessments of each sharer. Two other coders rated whether each selfie "is likely to go viral" on a scale of 1 to 5. Coders in this and all studies were blinded to study conditions.

Study 2. We sought to induce uniformly high compliance by stating during recruitment that participants would need a webcam. Participants could earn a bonus payment of up to $1.00 based on how others rated their photograph (*Supporting Information*).

Temporariness manipulation. Participants received a description of either temporary or permanent sharing (*Supporting Information*) that noted either that the raters could view their photograph "only once, for a maximum of 10 seconds," or "for as long as they want."

Privacy concern. Participants were asked to respond to the statement "In thinking about what kind of photograph to upload, I am concerned about my privacy" on a scale of 1 (strongly disagree) to 7 (strongly agree).

Selfie coding. For selfie coding, we used the same procedure as in study 1 (agreement = 95%, $\kappa = 0.90$, $z = 16.11$, $P < 0.005$).

Judgment ratings. Judgment ratings were as in study 1, but a 1–7 scale was used (and also was used in studies 4–6). Each rater was randomly assigned a set of selfies to rate (*Supporting Information*).

Study 3.

Outcome measure. After reading introductory text describing their role (*Supporting Information*), actors [observers] were asked: "Do you think *you* [the person] would make a better impression *on the person you're sending your risqué selfie to* [in sending you the risqué selfie] if *you* [they] sent the selfie via Snapchat? Via iMessage? Or would it not matter?"

Check. Most (88%, NS by condition) identified that sharing is permanent on iMessage and temporary on Snapchat.

Study 4.

Pretest. Participants ($n = 100$, same population as in study 4) viewed the introductory text from either the temporary or permanent condition, read filler information, and then were quizzed on whether the text had invoked temporary or permanent sharing (pass rate: 90%, NS by condition).

Stimuli. We used a pool of 20 selfies, generated by 10 students (same population as the participants), each of whom took two Moment Machine selfies: a control (e.g., smiling) photograph and an uninhibited one (silly/unusual face: $n = 5$; gesture: $n = 7$; prop: $n = 3$; action: $n = 2$; these sum to greater than 10 because some photographs had multiple markers of disinhibition).

Temporariness manipulation. After reading a description of the Moment Machine (*Supporting Information*), participants were told: "The person in the photograph below shared it temporarily [permanently]."

Study 5.

Stimuli (also for study 6A and 6B). Participants were randomized to view one of 10 uninhibited (silly/unusual face: $n = 6$; gesture: $n = 7$; prop: $n = 2$; action: $n = 1$; some had multiple markers of disinhibition) or 10 not-uninhibited selfies from previous participants who had agreed to let us use them.

Check. Most (93%, NS by condition) identified that the selfie had been shared "only temporarily (i.e., via Instagram Stories)" as opposed to "permanently (i.e., via Instagram)."

Study 6A.

Experience measure. After reading a description of temporary sharing (*Supporting Information*), participants were asked: "Have you ever used such a feature? i.e., have you ever shared content temporarily via social media?" The response scale was binary, yes/no.

Check. Most (94%, NS by condition) correctly identified whether the selfie had been shared "only temporarily (i.e., via Instagram Stories)" vs. "permanently (i.e., via Instagram)."

Study 6B.

Experience manipulation. Participants in the experience condition were told "This photo will not be stored permanently on our servers. Just like when sharing via Snapchat, it will only be temporarily available for a few moments and self-destructs afterwards."

Check. Most (91%, NS by condition) correctly identified whether the selfie they evaluated had been shared via "ephemeral social media (e.g. Snapchat)" or "regular text messaging application (iMessage)."

Study 7A.

Selfie lookup. We prompted participants to type a letter (randomized by participant) into the Instagram search screen, generating a list of friends' and strangers' accounts with that letter. Participants were instructed to visit the Instagram Stories page of either the first friend or stranger on this list (randomized between subjects), to click through the Story, stopping at the first selfie they saw; if there was no selfie, they were to select the second friend [stranger] and continue until they found one.

Selfie disinhibition measure. Participants responded to the item: "the person in the selfie appears. . .," on a response scale of 1 (not at all uninhibited) to 7 (extremely uninhibited). We validated this measure in a pretest: As in study 7A, US MTurkers ($n = 87$) found a selfie on Instagram Stories and rated its disinhibition. Participants also provided information for us to download the selfies. Two coders rated the selfies on the same disinhibition scale; their ratings correlated with participants' ($r_1 = 0.37$, $P < 0.005$; $r_2 = 0.34$, $P < 0.005$).

Outcome measure. Because of the noise introduced by the realism of this context and because people already have a lot of information about their friends, the judgment measure focused on the posting decision: "Based on the decision to post this selfie, I think the person in the selfie has good judgment" on a response scale of 1 (strongly disagree) to 7 (strongly agree). Study 7B uses a more conservative measure.

Checks. We asked participants whether they and the person they had evaluated followed each other (mutual following is presumably less common for strangers). In the friend condition, 63% indicated mutual following, vs. 37% in the stranger condition [$\chi^2(1) = 34.34$, $P < 0.005$]. Most correctly identified whether they had (*i*) rated a friend vs. a stranger (93%, NS by condition) and (*ii*) looked up a selfie on Stories as opposed to the permanent feed (88%, NS by condition).

Study 7B.

Sharer type manipulation. Half of participants first entered the name of a friend, which was then piped into the instructions: "Imagine you are on Instagram and see a selfie posted by *your friend*, *name* [a stranger]. Further imagine *your friend*, *name* [the stranger] shared the selfie only temporarily, by using Instagram Stories. This means that the selfie can only be viewed temporarily; the photo self-destructs after 24 h."

Selfie type manipulation. Selfies were described textually only, by having participants suppose the sharer either looked "normal—i.e., smiling" or "very uninhibited," by "making a very silly face."

Judgment measure. Participants responded to the statement "If I saw that *my friend*, *name* [*a stranger*] had shared a *normal-looking* [*very silly*] selfie on Instagram Stories, I would think that they have good judgment" on a scale of 1 (strongly disagree) to 7 (strongly agree).

Checks. Most correctly identified whether the sharer (*i*) was "a stranger" or "your friend" (95%, NS) and (*ii*) "was simply smiling" or "looked very silly" (78%, NS).

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