The Positive Side of Social Comparison on Social Network Sites: How Envy Can Drive Inspiration on Instagram

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The Positive Side of Social Comparison on Social Network Sites: How Envy Can Drive Inspiration on Instagram

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Abstract

A growing body of research finds social network sites (SNS) such as Instagram to facilitate social comparison and the emotional experience of envy in everyday life, with harmful effects for users' well-being. Yet, previous research has exclusively focused on the negative side of social comparison and envy on SNS. Thereby, it has neglected two important aspects: (a) comparison processes can also elicit a beneficial emotional reaction to other users' online self-presentations (i.e., benign envy) and, thus, (b) comparisons can be motivating, with positive outcomes for well-being. The present study aims at closing this research gap by investigating how social comparisons and envy on SNS are related to *inspiration*, a complex motivational state. Due to its specific characteristics of a creative and aesthetic visual culture, we focus our investigation on Instagram. A structural equation modeling mediation analysis with data from $N = 385$ Instagram users reveals that the intensity of social comparisons on Instagram was positively related to inspiration and that this relationship was fully mediated by benign envy. Furthermore, inspiration on Instagram was related to increased positive affect. Results of this study underline that to understand the effects of SNS on well-being, we also need to consider the positive motivational side of social comparison and envy.

Keywords: Instagram, social comparison, envy, inspiration, well-being

Introduction

INSTAGRAM HAS BECOME a frequently used mobile social network site (SNS) that is deeply embedded in users' everyday lives.[1,2] Research shows that the visual content shared on Instagram can impair well-being, particularly by facilitating social comparison processes[1,3] and by eliciting negative emotions such as envy.[4] However, comparing oneself to others can also drive individuals to engage in new and self-improving behaviors,[5,6] eliciting positive motivational outcomes such as inspiration.[7] Inspiration describes a complex intrinsic, yet, stimulus-evoked approach motivation that animates individuals to transcend their current selves,[8] thus being highly beneficial for individuals' well-being.[9] In the present study, we investigate whether comparisons on Instagram can contribute to well-being by eliciting this positive motivational state of inspiration.

After reviewing comparison processes and their outcomes on SNS, we will make the case for inspiration as a positive outcome of comparisons on Instagram. We will then introduce the distinction between malicious and benign envy[10,11] as a potential mechanism linking comparisons to inspiration

on Instagram. In doing so, we also integrate our research with previous research on the negative well-being outcomes of social comparison and envy on SNS.

The Positive Side of Social Comparison on SNS

Social comparison is defined as "the process of thinking about information about one or more other people in relationship to the self."[12(pp520f)] Comparisons allow one to assess the self in relationship to a target on a personally relevant criterion, which is evolutionarily adaptive and thus deeply engrained in human psychology.[13] Research often distinguishes between *upwards* and *downwards* comparisons. While upward comparisons are typically associated with negative effects for the self (i.e., feeling inferior), downward comparisons are associated with positive effects (i.e., feeling superior).[13] However, neither direction necessarily determines positive or negative outcomes.[5] Instead, the effects of comparisons seem to be determined by a selective information accessibility mechanism: *assimilation* versus *contrast*.[14,15] While assimilative comparisons shift the individual's focus toward becoming similar to the comparison target, contrastive comparisons shift

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the focus toward the differences with the target and what upholds them. Research further indicates that while contrast with upward targets and assimilation with downward targets decrease well-being, assimilation with upward targets and contrast with downward targets increase well-being.[13]

With regard to SNS environments, research has so far overwhelmingly focused on ''negative'' (i.e., contrastive) upward comparisons.[4] Unsurprisingly then, studies on SNS have predominantly found negative effects of comparisons on well-being such as increased depressive symptoms,[1,16] higher negative affect,[17] and lower positive affect,[3] as well as lower (state) self-esteem.[2,17] In contrast, a recent survey found comparisons on Facebook that were motivated by self-improvement to be associated with higher positive affect among individuals with high self-esteem.[18] In general, upward comparisons have been found to elicit positive motivational outcomes such as inspiration.[6] Together, this literature points to an important gap in previous research: comparisons on SNS may also have positive motivational outcomes. In this study, we specifically focus on how such comparisons may give rise to inspiration on the understudied SNS Instagram.

Inspiration as a Motivational Outcome of Instagram Use

Inspiration is conceptualized as a complex appetitive motivational state that can be experienced in various domains of life.[19] Three components define the experience of inspiration: First, *transcendence* refers to gaining an awareness of new or better possibilities (e.g., learning about a previously unknown travel destination from a friend's SNS post). Second, *evocation* clarifies that inspiration is, initially, a passive and stimulus-evoked experience. One is spontaneously *inspired by* something (e.g., one first encounters information about said travel destination serendipitously by browsing one's SNS feed). Finally, inspiration elicits *approach motivation*. One is *inspired to* get active and bring a new and realizable idea into fruition (e.g., the travel post elicits the specific idea of planning your next holiday there). Thus, by spontaneously encountering novel stimuli that resonate with their current interests, individuals can be inspired to try out new experiences.[20]

Instagram, a mobile SNS through which users share pictures and videos on diverse topics (e.g., travel, nature, food, sports, art), appears as a highly inspiring social environment. Instagram has a particularly strong visual positivity norm.[1] Uploaded content is typically aesthetic and optimized for self-presentation, but also a result of creative self-expression. A study by Ouwerkerk and Johnson[7] found inspiration to be a prevalent motive for following and friending others on SNS, particularly on Instagram. Results indicate that inspiration was significantly related to time spent on Instagram as well as the number of followings, but unrelated to time spent on other SNS. Thus, there is some evidence indicating that Instagram provides a source of inspiration in users' everyday lives.

Previous studies identified the intensity with which individuals engage in comparisons as a key driver of inspiration in general.[6] We aim to replicate this link in the Instagram context. While one would expect *upward* comparisons to be particularly strongly related to inspiration on Instagram, in this study, we only consider general, *nondirectional* social comparison intensity on Instagram. As self-report scales supposedly measuring upward comparisons often conflate them with negative

effects for the self,[4] we instead measured social comparison with neutral, nondirectional intensity items (see Measures for details).[16] Accordingly, we expect the following:

H1: Nondirectional social comparison on Instagram will be positively related to inspiration on Instagram.

Inspiration activates intrinsically motivated behavior, which is highly beneficial for affective well-being.[21] Accordingly, inspiration has been linked longitudinally and experimentally to increased *positive affect* while showing no relationship to *negative affect*.[9,22] With regard to inspiration as a result of using Instagram, we thus analogously assume,

H2: Inspiration on Instagram will be (a) positively related to positive affect and (b) unrelated to negative affect.

So far, it remains unclear how exactly comparisons on Instagram can contribute to the positive motivational state of inspiration and, hence, to well-being. Moreover, previous research clearly shows that comparisons on SNS can negatively impact motivation and well-being.[1,2,4] To integrate our positive view on social comparison with previous research and to explicate a mechanism linking comparisons to inspiration, we turn our investigation to envy, a key emotional outcome of upward comparisons.[4,15]

Malicious and Benign Envy on SNS

Envy is usually defined as ''an unpleasant and often painful blend of feelings characterized by inferiority, hostility, and resentment caused by a comparison with a person or group of persons who possess something we desire.''[23(p49)] While envy has long been seen as an inherently negative and self-harming emotion, recent research has reconceptualized envy as an emotion that can take two forms: First, *malicious envy* or envy proper, which elicits a hostile motivation to pull the superior comparison target down. Second, *benign envy*, while also being mildly frustrating, elicits a more benevolent motivation to self-improve and become more similar to the superior comparison target.[10,11]

Since the mechanisms underlying assimilation versus contrast in social comparison are assumed to occur largely unconsciously,[14] they can best be measured *indirectly* by assessing their respective emotional outcomes (i.e., malicious vs. benign envy) via self-reports.[15] As an emotional outcome of upward comparison processes,[15] malicious envy indicates the intensity of *contrastive upward comparisons*. That is, malicious envy assesses whether the attentional focus of comparison lay on the deficits one has in comparison to the target. Benign envy, in turn, indicates the intensity of *assimilative upward comparisons*, assessing whether the attentional focus lay on ways to become more similar to the target.[14]

Research on envy as a mediator between SNS usage (specifically, comparisons on SNS) and well-being has so far exclusively investigated malicious envy—indicating contrastive upward comparisons—and thus consistently found negative effects.[24–27] Yet, the overall literature on SNS observes both positive and negative effects on well-being.[28] A recent review has thus called for a differentiation between benign and malicious envy as this may ''shed light on the conflicting findings concerning SNS use.''[4(p47)] Indeed, a

study by Lin and Utz[29] found that Facebook postings elicited much stronger benign than malicious envy.[10,29] Thus, while SNS can certainly elicit malicious envy, benign envy, in comparison, may be the much more common emotional re-action towards friends' postings on SNS such as Instagram. It appears plausible then that social comparisons in the positive, self-optimized, yet ultimately mundane visual network culture of Instagram can elicit both benign as well as malicious envy. Accordingly, we assume the following:

H3: Nondirectional social comparison on Instagram will be positively related to (a) benign envy and (b) malicious envy on Instagram.

Turning to the role of envy as a driver of inspiration, benign envy as a benevolent assimilative emotion should sensitize an individual for information on how to become similar to a comparison target and thus facilitate the experience of being inspired. Malicious envy as a contrastive emotion, in turn, should decrease the likelihood of such motivating inspiration experiences.[15,30] Thus, we assume the following:

H4: (a) Benign envy will be positively and (b) malicious envy will be negatively related to inspiration on Instagram.

Since we expect a positive direct effect of social comparison on inspiration (H1), positive relationships between social comparison and benign and malicious envy (H2), and opposing relationships between benign versus malicious envy on inspiration (H3), we state the following mediation hypotheses:

H5a: Nondirectional social comparison will have a positive indirect effect on inspiration via benign envy on Instagram.

H5b: Nondirectional social comparison will have a negative indirect effect on inspiration via malicious envy on Instagram.

Finally, previous research has consistently found two individual differences, self-esteem and narcissism, to influence how individuals use SNS and how they process other users' social information.[2,18,31,32] Both traits have also been identified as crucial personality variables for the effects of social comparison[5,13] and envy.[29] We thus include them, together with age and gender, as controls in our research model.

Methods

Participants and procedure

A total of 385 German-speaking Instagram users were recruited in late 2016 through postings on Facebook and Instagram profiles as well as in public Facebook groups and via personal messages. The study was promoted as a study about "Instagram use," avoiding any positive or negative connotation. Having an Instagram account was mandatory to participate.

Participants were aged 18–52 years ($M = 22.64$; $SD = 4.00$), predominantly highly educated (77 percent students), female (82 percent), and reported frequent Instagram usage, with 89 percent using it at least once a day. The sample approximates results of a 2015 representative survey of German SNS users,[33] where 14–29-year-olds made up 70 percent of all Instagram users. Fourteen to 29-year-olds also predominantly used Instagram daily (71 percent) and daily users between 14 and 29 were twice as likely to be female than male.

Measures

All items included in this study were measured on five-point Likert scales anchored at 1 ("strongly disagree") and 5 ("totally agree"). For means, SDs, internal consistencies, and zero-order correlations, see Table 1.

Social comparison. We measured social comparison intensity on Instagram with two items from the Facebook Social Comparison Scale[16] adapted to Instagram. Of the six original items, we included only the two items assessing *nondirectional* comparison [e.g., "When I am using Instagram, …" (a) "…I pay a lot of attention to how I do things compared to how others do things" and (b) "…I want to find out how well I do things compared to others"]. The other four items already predetermined positive or negative outcomes of downward or upward comparison, respectively, and were thus omitted.

Malicious and benign envy. To measure malicious and benign envy, we used the scale by Lange and Crusius.[10] The original scale consists of five items for malicious and benign envy each, which we adapted to assess emotional experiences during typical Instagram use (e.g., "Seeing other people's achievement on Instagram makes me resent them" for malicious envy and "When I envy others on Instagram, I focus on how I can become equally successful in the future" for benign envy).

Inspiration. We used the four-item Inspiration Scale[8] to measure participant's intensity of inspiration on Instagram. While two items asked how strongly users experience inspiration on Instagram (e.g., "When I am on Instagram, I experience or encounter things that inspire me"), two additional items referred to inspiration specifically derived from other users' photos or videos (e.g., "When I am on Instagram, I am inspired by the posts of other users to do something [new]").

Positive and negative affect. We used a 10-item short-version of the PANAS to assess positive and negative affect.[34] Participants were asked to report how intensely they had experienced different affective states (e.g., excited, determined, distressed, afraid) during the last week.

Trait narcissism and trait self-esteem. We measured these control variables using 10-item versions of the two most commonly used scales, the Narcissistic Personality Inventory[35] and the Rosenberg Self-Esteem Scale.[36]

Results

Exploratory analyses

On the five-point scales used in this study, participants reported substantial levels of inspiration on Instagram ($M = 3.62$, $SD = 1.04$) and higher levels of benign ($M = 2.16$, $SD = 1.00$) than malicious envy ($M = 1.44$, $SD = 0.69$). Moreover, inspiration showed significant zero-order relationships with most of the other investigated constructs (Table 1).

TABLE 1. MEANS, STANDARD DEVIATIONS, INTERNAL CONSISTENCIES (CRONBACH'S α), AND ZERO-ORDER
CORRELATIONS FOR STRUCTURAL EQUATION MODELING VARIABLES

Variable	M	SD	α	1	2	3	4	5	6	7	8	9	10
1. Nondirectional social comparison on Instagram	2.10	0.97	0.74	—									
2. Malicious envy on Instagram	1.44	0.69	0.87	0.35***	—								
3. Benign envy on Instagram	2.16	1.00	0.89	0.46***	0.38***	—							
4. Inspiration on Instagram	3.62	1.04	0.93	0.14**	0.00	0.34***	—						
5. Positive affect	3.21	0.71	0.70	-0.04	-0.08	0.01	0.16**	—					
6. Negative affect	2.09	0.74	0.72	0.09	0.17**	0.02	-0.11*	0.10	—				
7. Trait self-esteem	4.09	0.63	0.85	-0.24***	-0.23***	-0.15***	0.11*	0.25***	-0.31***	—			
8. Trait narcissism	2.93	0.67	0.81	0.06	0.10*	0.17***	0.02	0.16**	-0.01	0.35***	—		
9. Age	22.64	4.00	—	-0.11**	-0.12*	-0.14**	-0.06	0.01	0.02	0.10	0.10	—	
10. Gender	—	—	—	-0.03	-0.07	-0.05	0.08	0.00	0.07	-0.06	-0.24***	-0.19***	—

Note. Based on $N=385$ participants and two-tailed significance tests. All scales are five-point Likert-scales with high values representing high levels of the respective construct. All scales, except the personality traits and affect, were assessed with respect to participants' "typical Instagram usage." Positive and negative affect were measured with respect to participants' "feelings in the last week." Gender is coded as $0=$ male, $1=$ female. $*p < 0.05$, $**p < 0.01$, $***p < 0.001$.

Testing the hypothesized model

We thus continued our analysis and tested hypotheses with structural equation modeling (SEM) using the *R* package *lavaan* (version 0.5-23.1097).[37] All constructs (see H1–H5) were treated as latent variables. The overall measurement model (i.e., without any structural paths) showed an adequate fit [$\chi^2(961) = 1,826.558$, $p < 0.001$; $\chi^2/df = 1.900$, comparative fit index, CFI $= 0.890$; root-mean-squared error of approximation, RMSEA $= 0.048$ (90 percent confidence interval, CI: 0.045–0.052); SRMR $= 0.062$].

However, since the CFI was below 0.900,[38] we implemented changes suggested by modification indices and included covariances between some of the error terms of items measuring the controls, narcissism and self-esteem. Likewise, self-esteem and narcissism as well as malicious and benign envy were allowed to covary. This improved the measurement model to a satisfying level [$\chi^2(957) = 1,622.237$, $p < 0.001$; $\chi^2/df = 1.695$, CFI $= 0.916$; RMSEA $= 0.042$ (90 percent CI: 0.039–0.046); SRMR $= 0.061$]. The structural model tested hypotheses based on this modified measurement model. Moreover, we controlled for the variance explained by age, gender, trait narcissism, and trait self-esteem in all model constructs (see H1–H5).

The SEM (Fig. 1) showed an adequate fit to the data [$\chi^2(1,043) = 1,751.376$, $p < 0.001$; $\chi^2/df = 1.679$, CFI $= 0.911$; RMSEA $= 0.042$ (90 percent CI: 0.039–0.046); SRMR $= 0.062$]. Results of the SEM and our mediation analysis revealed that social comparison did not have a significant *direct* relationship with inspiration ($\beta = 0.03$, $p > 0.05$), but showed a significant *total* relationship ($\beta = 0.21$, $p < 0.01$), suggesting full mediation via envy (see H5). Based on this significant overall relationship, we accept H1. As expected in H2a and H2b, inspiration on Instagram was positively related to positive affect ($\beta = 0.17$, $p < 0.01$) and showed no significant relationship with negative affect ($\beta = -0.09$, $p > 0.05$). Confirming H3a and H3b, social comparison was positively related to both benign ($\beta = 0.50$, $p < 0.001$) and malicious envy ($\beta = 0.31$, $p < 0.001$). As predicted in H4a, benign envy was positively related to inspiration ($\beta = 0.44$, $p < 0.001$). However, the negative relationship between malicious envy and inspiration was only marginally significant ($\beta = -0.11$, $p = 0.09$), leading to a rejection of H4b.

We continued by investigating whether benign and malicious envy mediated the relationship between social comparison and inspiration (H5a and H5b). Significance of indirect relationships was tested with 5,000 bias-corrected bootstrap subsamples on a 95 percent CI. In line with H5a, social comparison showed an indirect relationship with inspiration via benign envy ($\beta = 0.22$, $p < 0.001$, LLCI $= 0.166$, ULCI $= 0.422$). The indirect relationship with inspiration via malicious envy did not reach significance ($\beta = -0.03$, $p > 0.05$, LLCI $= -0.106$, ULCI $= 0.003$). Consequently, H5b was rejected.

Supplementary analyses

Since the paths between social comparison to benign envy, inspiration, and positive affect all reached significance, we tested a serial mediation that considered these paths simultaneously. Indeed, we found the relationships between social comparison and positive affect to be mediated through benign envy and inspiration ($\beta = 0.04$, $p < 0.05$, LLCI $= 0.004$, ULCI $= 0.061$). The serial mediation from social comparison
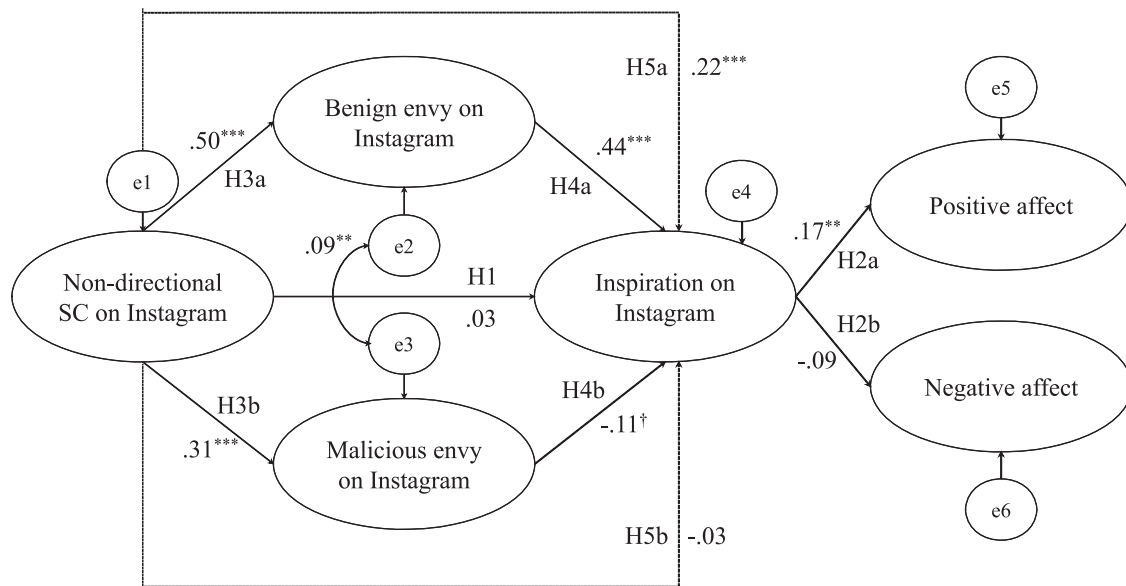
FIG. 1. Structural equation model of the hypothesized relationships (H1–H5), with age, gender, trait narcissism, and trait self-esteem as controls. *Note.* Observed structural equation model based on data from $N = 385$ participants. Fit indices are $\chi^2(1043) = 1751.376$, $p < 0.001$; $\chi^2/df = 1.679$; CFI = 0.911; RMSEA = 0.042 (90% C.I.: 0.039, 0.046); SRMR = 0.062. Scores in the figure represent standardized path coefficients. In all latent constructs, we controlled for variance explained by age, gender, trait narcissism, and trait self-esteem (not displayed for sake of clarity). Significance of indirect effects was tested with 5000 bias-corrected bootstrap sub-samples on a 95% confidence interval. $^{†}p < 0.10$, $^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$. SC, social comparison.

through malicious envy and inspiration on negative affect, however, was not significant ($\beta = 0.00$, $p > 0.05$, LLCI = −0.001, ULCI = 0.008). Integrating both serial mediations into the model did not change any of the relationships reported in Figure 1.

Discussion

Summary and contribution

The present study investigated whether social comparisons on the popular picture- and video-sharing SNS Instagram can also be beneficial for users' well-being by facilitating the motivational experience of inspiration. Overall, we contribute to the literature on SNS and well-being in four ways: First, our results provide clear evidence for a link between social comparison and inspiration on Instagram. Crucially, we observed a significant relationship between social comparison and inspiration, which was found to be fully mediated by benign envy, an emotional outcome of assimilative upward comparisons.

Second, increased inspiration on Instagram was related to higher levels of positive affect. In line with general inspiration research,[9,22] this underlines the positive well-being outcomes that Instagram users can derive from experiencing increased approach motivation in the form of inspiration. The present study thus suggests that users can improve the short-term affective outcomes of their Instagram usage by following content that inspires them to pursue new and personally interesting activities (e.g., traveling, sports, cooking), akin to, for example, reading special interest magazines.

Third, while our results show that malicious envy seems to be largely irrelevant for the level of inspiration that users associate with Instagram, our findings do not refute that malicious

envy can negatively affect well-being, as consistently found in previous studies.[24,27] Yet, we would not have been able to detect the positive relationship between envy and inspiration had we only investigated malicious envy, as previous studies have. In the broader context of research on social comparison and envy on SNS, this underlines the need to approach psychological processes more comprehensively—that is, including a potential positive side—when assessing the supposedly detrimental effects of user engagement with SNS on well-being.

Finally, by focusing on Instagram, we contribute to SNS research beyond Facebook. It can be assumed that the positive experience of inspiration results from Instagram-specific visual content as well as Instagram's particular functionality (e.g., searching and browsing via content- or location-specific hashtags). Other SNS (e.g., Pinterest vs. Facebook) might evoke similar or different outcomes, respectively, due to their distinct content and design properties. Our study thus underlines the need to differentiate between SNS when investigating their role for well-being.

Limitations and future research

While the present study advances previous research on SNS and well-being, it certainly comes with limitations. First, the analysis is limited by the cross-sectional nature of our data. Results should not be mistaken for causal evidence. Second, although we investigated a large dataset from $N = 385$ Instagram users, our convenience sample consisted of mostly young, highly educated, and female participants who frequently used Instagram. Even though these skewed distributions are somewhat reflective of German Instagram users,[33] the considerable bias in our sample as well as the nonrandom sampling procedure limit interpretations of our results to the investigated data.

Future SNS research on the effects of social comparison and envy can build on this study in numerous ways. For instance, our study did not incorporate several important moderators of social comparison processes on SNS, such as tie strength,[29] the amount of strangers that users follow,[1] or the attainability of comparison standards.[6] Comparing the inspirational effects of postings from strong versus weak tie users who depict their successes with ''hubristic pride'' rather than humility may be a worthwhile task for future research.[4] Moreover, assessing whether social comparison and envy can have similar beneficial effects on other SNS (e.g., Pinterest or Facebook) remains a pressing task.

Since our results refer to inspiration derived from *overall* Instagram use, it seems particularly important for future research to distinguish between inspiration derived from different Instagram contents. For example, ''fitspiration'' imagery has been linked to lower body image and mood among female undergraduates when compared to travel imagery.[39] Thus, there might also be a dark side to inspiration derived from certain contents on SNS. Nonetheless, results of our study point to a positive association between *overall* Instagram inspiration and affective well-being.

Conclusion

In conclusion, results of this study indicate that mundane forms of Instagram use can provide users with new ideas and impulses, potentially motivating them to transcend their current selves and strive for self-improvement. We found a positive association between such ''Instagram inspiration'' and users' affective well-being and further identified a relevant psychological mechanism driving inspiration: Benign envy as an emotional outcome of assimilative upward comparisons sensitizes individuals for social information on how to self-improve and close up to their peers, hence, facilitating inspiration. To complete the picture of the effects of SNS on well-being, future research will thus benefit from investigating not just the negative but also the positive side of social comparisons and envy on SNS.

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Author Disclosure Statement

No competing financial interests exist.

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