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Inspired by Friends: Adolescents' Network Homophily Moderates the Relationship Between Social Comparison, Envy, and Inspiration on Instagram

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Abstract

Research on the negative psycho-emotional implications of social comparisons on social network sites such as Instagram has rapidly accumulated in recent years. However, little research has considered the extent to which such comparisons can elicit positive motivational outcomes for adolescent users, specifically inspiration. Furthermore, little is known about whether it matters whom young people compare themselves to on Instagram (i.e., network composition) and how this may modulate the emotional outcomes of Instagram social comparisons. The present study thus sought to determine how adolescents' Instagram comparisons of ability associate with inspiration via the mechanism of benign and malicious envy. We further examined whether two key aspects of network composition—perceived similarity and the amount of strangers followed—moderated these relationships. Results from a paper survey among $N = 266$ British adolescents confirm the hypothesis that those adolescents who compare more strongly on Instagram also report more inspiration from Instagram use. While benign envy positively mediated this relationship, malicious envy worked in the opposite direction, indicating the need to distinguish these two types of envy in future research. In addition, whilst the amount of strangers followed did not significantly affect the relationships between social comparison, envy, and inspiration, higher perceived network homophily positively moderated the relationship between social comparison and inspiration by eliciting more benign and less malicious envy. Results overall suggest that social comparisons on Instagram may be more inspiring when adolescents compare themselves to similar others and avoid unachievable false role models in their online networks.

Keywords: Instagram, social comparison, envy, inspiration, homophily, strangers

Inspired by Friends: Adolescents' Network Homophily Moderates the Relationship

Between Social Comparison, Envy, and Inspiration on Instagram

Introduction

Instagram is a photo-sharing social network site (SNS) that is particularly popular with adolescents.[1] Since Instagram enables its users to engage with vast amounts of visual content and social information, it has provided young people with a convenient channel for social comparisons of ability.[2] Whilst much of the scholarly attention regarding SNS social comparisons has focused upon their negative psycho-emotional implications,[2, 3, 4, 5, 6, 7] comparing one's abilities to those of others can also engender positive motivational outcomes, such as inspiration.[8, 9, 10] As inspiration sparks intrinsically motivated behaviour, it has been repeatedly related to increased well-being[11] and may thus be a beneficial experience for SNS users. Although researchers have started to investigate such positive motivational consequences of Instagram comparisons, scholarship has thus far exclusively drawn upon adult or university age samples. Yet, as adolescence is a critical period for identity development,[12, 13] and social comparisons are major mechanisms of self-knowledge, it is important that researchers also consider the psycho-emotional consequences of Instagram comparisons during adolescence. As such, in the present study, we seek to determine whether *adolescents* – the most avid users of Instagram[1, 14, 15] – also take advantage of the inspirational potentials of Instagram social comparisons.

Additionally, based on social comparison theory, the effects of Instagram comparisons should be affected by *who* adolescents compare themselves with. Prior research has started to explore this role of *network composition* for social comparison effects on SNS among young adults.[16, 17] We aim to extend this line of work by systematically disentangling the moderating effects of two key aspects of network composition—perceived similarity to one's network (i.e., homophily) and the amount of strangers followed—on the emotional

outcomes of Instagram social comparisons among adolescents. Specifically, we investigate two distinct but related emotions, benign and malicious envy,[18] that may differentially affect the inspirational outcomes of Instagram social comparisons.[19] Results are discussed with regard to their implications for adolescents' use of popular SNS such as Instagram.

SNS Social Comparisons and Inspiration

Social comparisons of ability are pervasive and potent human proclivities, and occur when individuals seek to determine how well they are doing relative to others;[20] ability comparisons are, therefore, highly judgemental and competitive.[21] Whilst such comparisons may be strategically exercised to fulfil fundamental needs – such as self-evaluation,[20] self-enhancement,[22] and self-improvement[23] – not all comparisons are a deliberative process; rather, they often occur spontaneously, unconsciously, and implicitly.[24] Nevertheless, social comparisons of ability can have a profound impact upon our judgements, behaviour, and overall well-being.[25]

As Instagram users tend to present themselves in a mostly positive light on the platform,[26] upward comparisons – where individuals consider others to be *better* off than themselves – are likely to be commonplace on the SNS. To date, much of the scholarly attention on SNS social comparisons has focused upon the negative psycho-emotional impact of comparing one's abilities to those one deems superior. Research has found such comparisons to be associated with feelings of jealously, envy, and anxiety,[4, 5] increased depressive symptoms,[3] low self-esteem,[7] high negative affect,[6] and low positive affect.[2]

Despite this concerning trend, research is beginning to emerge which suggests that upward comparisons of ability on SNSs may also elicit *inspiration*, defined as a positive motivational process through which individuals feel compelled to bring better possibilities to fruition having encountered new stimuli that resonate with their personal interests.[11] For example, in a qualitative study of university students in the U.S., Mao[27] found that although

some participants reported feelings of jealousy, inferiority, and stress following social comparisons on Instagram, said comparisons motivated them to work harder and seek advice from more successful peers. This process has since been captured in quantitative enquiry by Meier and Schafer.[19] In their survey of German-speaking adult Instagram users, they found inspiration to be a common experience and that social comparison intensity on Instagram was positively related with inspiration via benign envy. *Benign envy,* whilst still slightly unpleasant and frustrating, motivates individuals to move upwards and gain the coveted quality, achievement, or possession.[18] Interestingly, Meier and Schäfer[19] also reported that social comparisons on Instagram had a small negative effect on inspiration via *malicious envy* – envy which entails hostility and seeks to harm, pull-down, or disparage the superior other.[28, 29] These findings suggest that Instagram social comparisons of ability are capable of both driving and inhibiting feelings of inspiration through the mechanism of benign and malicious envy. With this in mind, this study predicts:

H1a: Social comparisons of ability on Instagram will have a positive indirect effect on inspiration via benign envy on Instagram.

H1b: Social comparisons of ability on Instagram will have a negative indirect effect on inspiration via malicious envy on Instagram.

The Moderating Role of Network Composition

Why is it that some upward comparisons on SNSs result in positive emotional outcomes, whilst others have negative emotional implications? The social comparison literature suggests that perceived similarity between the comparer and comparison target may play a significant role.[9, 30, 31] In effect, when the comparer considers the upward comparison target to be similar in related attributes, they are informed that they can – or have the potential to – perform similarly, thus generating upward assimilative emotions such as admiration, optimism, and benign envy.[10] However, unlike with opinions, non-social

constraints can make it challenging or even impossible for individuals to change their abilities, no matter how motivated they are to do so.[20] As such, in cases where the comparer believes that they are unable to close the gap between themselves and the advantaged other, upward contrastive emotions – such as shame, resentment, and malicious envy – are likely to follow.[8, 28]

Whilst it has been argued that individuals tend to adhere to the 'homophily principle' on SNSs - whereby they 'friend' or 'follow' those with similar demographic traits and cultural preferences,[32] there is, to date, no published research investigating the role of *perceived network homophily* in the emotional and motivational outcomes of SNS social comparisons. Drawing upon social comparison theory, it is reasonable to assume that for adolescents who perceive their Instagram network to be similar to them (i.e., high network homophily), social comparisons will result in greater feelings of benign envy and lesser feelings of malicious envy. With this in mind, we predict that:

H2a: Network homophily will positively moderate the relationship between social comparison of ability and benign envy on Instagram.

H2b: Network homophily will negatively moderate the relationship between social comparison of ability and malicious envy on Instagram.

As Instagram profiles and posts are usually (semi-)public and connections are nonreciprocal, users are provided with the opportunity to 'follow', view content shared by, and interact with individuals they do not know in offline contexts. Whilst such technological features have enabled young people to 'follow' their favourite sports stars, celebrities, and/or Instagram influencers, there is evidence to suggest that comparisons with *strangers* on SNSs may have more negative emotional outcomes than comparisons with friends or acquaintances.[2, 16, 17, 33] To help explain this phenomenon, we draw upon attribution theory. According to attribution theory, individuals tend to underestimate the role of context in

person perception.[34] Should one not know a comparison target, it is particularly challenging to determine whether their behaviour reflects stable personality dispositions, or whether situational contextual forces are at work.[35] Indeed, this correspondence bias is more likely to occur in cases where individuals make attributions about those they have never met.[16] With this in mind, when viewing images or videos posted on Instagram by celebrities, influencers, or other strangers, young people may be more likely to believe that they accurately reflect the lives of those who shared them. As a result, adolescents who 'follow' more strangers could be increasingly vulnerable to comparing their 'actual' lives to the unrealistic lives others portray on Instagram, which may have detrimental psycho-emotional implications. Thus, we assume that:

H3a: Amount of strangers followed will negatively moderate the relationship between social comparisons of ability and benign envy on Instagram.

H3b: Amount of strangers followed will positively moderate the relationship between social comparisons of ability and malicious envy on Instagram.

Methods

Participants and Procedure

Adolescents who attended a large Catholic secondary school and sixth form college in the East Midlands, England, were invited to complete a paper survey regarding their use of Instagram. Informed consent was obtained by the head teacher loco parentis and student participation was voluntary. All students above the age of thirteen were invited to take part, and the survey was completed during morning form time as not to disrupt lesson timetabling. Prior to data collection, ethical approval was received from the [BLINDED] University Research Ethics Committee. Eight hundred and seventy surveys were distributed and two hundred and sixty-six were returned, giving a response rate of 30.6%. Respondents were aged

between 13-18 years (M = 15.22; SD = 1.69), and predominantly identified as White British

(79.1%) and female (55%)".

Measures

The survey contained demographic questions regarding age, gender, and ethnicity,

along with five Likert-scale multi-item measures. Reverse coded items were removed a priori

from all scales to avoid adolescent participants becoming fatigued.

Social Comparison of Ability. To determine how strongly adolescents compared their

abilities on Instagram, four items from the social comparison of ability subscale of the Social

Media Social Comparison Scale[36] were adapted to Instagram. Participants were asked to

consider how often they compared their abilities to others on Instagram, and indicate how

well each item applied to them on a five-point Likert scale (1 = not at all, 5 = very well).

Example items include "When using Instagram, I compare how I do things with how others

do things" and "On Instagram, I compare what I have done with others as a way to find out

how well I have done something".

Benign and Malicious Envy. Following Meier and Schäfer,[19] we modified the Benign

and Malicious Envy Scale[37] to assess Instagram-elicited emotional outcomes. The measure

contains 10 six-point Likert scale items (1 = strongly disagree, 6 = strongly agree), five of

which concern benign envy, and five regarding malicious envy. An example item on the

modified benign envy subscale was "Envying others on Instagram motivates me to

accomplish my goals", whilst an example item on the modified malicious envy subscale was

"I feel ill will towards those on Instagram who I envy".

Inspiration. To measure inspiration, we modified the four-item intensity subscale of

the Inspiration Scale.[38] This measure is on a seven-point Likert scale (1 = strongly disagree, 7

= strongly agree), and consistent with the work of Meier and Schafer.[17] The first two items

determined the extent to which participants experienced inspiration on Instagram (e.g. "When

I am on Instagram, I experience or encounter things that inspire me"), whilst the final two items referred to inspiration specifically derived from the content shared by those they 'follow' on Instagram (e.g. "When I am on Instagram, I am inspired by the posts of other users to do something new").

Network Homophily. To collect data regarding how similar adolescents felt to those they 'follow' on Instagram, we modified eight items from the Homophily Scale.[39] This measure is on a seven-point Likert scale (1 = strongly disagree, 7 = strongly agree). Example items include "The people I 'follow' on Instagram think like me" and "The people I 'follow' on Instagram have a lot in common with me".

Strangers Followed. To determine what percentage of those adolescents follow on Instagram are 'strangers' to them, participants were asked to estimate "What percentage of people that you follow on Instagram do you not know in 'real' life?", similar to the measure used by Lup et al.[17]. Participants were provided with 11 options from 0 = 0% to 10 = 100%.

<div align="center">**Results**</div>

Exploratory Analysis

On the seven-point scale used in this study, adolescent participants reported high levels of inspiration on Instagram ($M = 4.57$, $SD = 1.52$). Interestingly, on a five-point scale, participants reported to experience higher levels of benign envy ($M = 2.84$, $SD = 1.06$) than malicious envy ($M = 1.95$, $SD = .82$) on Instagram. Furthermore, Instagram inspiration was significantly positively correlated with a number of key variables in this investigation, including social comparison of ability ($r = .22$, $p < .001$), benign envy ($r = .41$, $p < .001$), network homophily ($r = .37$, $p < .001$), and strangers followed ($r = .16$, $p = .02$) (Table 1).

<div align="center">[Table 1 about here]</div>

Testing the Hypothesized Model

We tested the hypotheses using Models 4 and 9 in the PROCESS Macro SPSS plug-in.[40] PROCESS handles missing data through listwise deletion, and thus, this first test using Model 4 reports on the findings from a sample of 210 respondents, whilst the second using Model 9 reports on the findings from a sample of 193 participants. We used Model 4 to test the mediating effect of benign and malicious envy on the relationship between Instagram social comparisons of ability and Instagram inspiration (Table 2). The analysis revealed that whilst social comparison of ability had a significant total effect on Instagram inspiration (β = .24, *SE* = .07, *p* < .001, 95% CI = .11, .37), its direct effect was not significant (β = .06, *SE* = .07, *p* = .37, 95% CI = -.08, .21), suggesting full-mediation. In terms of indirect paths, it was found that benign envy positively mediated (point estimate = .21, *SE* = .05, 95% CI = .12, .32), and malicious envy negatively mediated (point estimate = -.04, *SE* = .02, 95% CI = -.09, -. 001), the relationship between social comparison of ability and Instagram inspiration. Thus, we accepted H1a and H1b.

[Table 2 about here]

Using Model 9, we then tested the moderating effect of network homophily and strangers followed on the relationship between social comparison of ability and benign and malicious envy (Table 3). Network homophily was found to positively moderate the relationship between social comparison of ability and benign envy (β = .13, *p* < .05), and negatively moderate the relationship between social comparison of ability and malicious envy (β = -.14, *p* < .05), thus allowing us to accept H2a and H2b. Furthermore, network homophily was found to significantly moderate the indirect relationship between social comparison of ability and Instagram inspiration via both benign (index = .07, *SE* = .03, 95% CI = .01, .13) and malicious envy (index = .03, *SE* = .01, 95% CI = .004, .06), indicating moderated mediation.

In contrast, strangers followed did not significantly moderate the relationship between social comparison of ability and either benign (β = .01, p = .86) or malicious envy (β = .04, p = .52). Unsurprisingly, then, strangers followed did not significantly moderate the indirect relationship between social comparison of ability and Instagram inspiration via either benign (index = .01, SE = .03, 95% CI = -.06, .07) or malicious envy (index = -.01, SE = .01, 95% CI = -.03, .02). We therefore rejected H3a and H3b.

[Table 3 about here]

Discussion

Summary and Contribution

This investigation sought to determine whether adolescents who engage in more social comparison on Instagram benefit more strongly from the positive motivational state of inspiration. As predicted, we found a significant relationship between social comparisons of ability and inspiration on Instagram, which was fully mediated by benign and malicious envy. In line with previous research,[19] these findings provide evidence of envy acting as a mechanism that drives and inhibits Instagram inspiration, and further emphasises the need for cyberpsychologists to differentiate between the two forms envy given their opposing association with inspiration. Furthermore, our findings illustrate that adolescents process and experience content and social information on Instagram highly similar to older users. Thus, Instagram, and SNS use in general, may yield not only negative, but also positive consequences for young people.

We further considered the moderating effect of network homophily and strangers followed on the emotional outcomes of Instagram comparisons. Consistent with the social comparison literature,[8, 10, 28] comparisons by adolescents reporting to be in more homogeneous Instagram networks resulted in more benign envy and less malicious envy, which facilitated inspiration. Such findings suggest that should adolescents wish to elicit

inspiration via Instagram comparisons, comparing themselves with slightly superior others, rather than significantly superior others, would yield more positive and less negative emotional and motivational outcomes.

In contrast, whilst previous research had suggested that comparisons with strangers on SNSs may have more negative psycho-emotional implications,[2, 16, 17, 33] we found that having more strangers in your Instagram network had no significant impact upon the envy experienced following Instagram comparisons of ability. Interestingly however, we did find that strangers followed showed a small, positive correlation with Instagram inspiration. This finding may be interpreted twofold: First, those who have more lose ties (i.e., people perceived as virtual strangers) in their online social networks may benefit more from the "strength of weak ties",[41] seeing more content perceived as new, which should be beneficial to inspiration.[38] Alternatively, this finding could indicate that the strangers followed on Instagram are often professional users such as influencers or celebrities, who produce more high-end content more likely to elicit inspiration. In any case, future research may benefit from distinguishing network composition further, for instance, by decomposing the "strangers" category into more specific sub-populations.

Limitations and Future Research

Whilst this study is amongst the first to have considered adolescents, Instagram comparisons of ability, and inspiration, it comes with its limitations. Given the cross-sectional nature of the data collected, causality cannot be inferred. Furthermore, since the sample size was not particularly large ($N = 266$) and participants attended the same educational setting, further research is required before generalisable conclusions can be made. As this study adopted a domain-independent approach to inspiration,[37] it is important for future research to consider how adolescents experience inspiration from different contents on SNS, such as travel, fitness, or career-related imagery. Indeed, studies have repeatedly

shown that "fitspiration" imagery may be more harmful for adolescents and young adults than other inspirational content.[42] Moreover, while comparison-induced inspiration may be perceived as a short-term benefit, it may also result in an unhealthy orientation towards extrinsically motivated self-optimization. Whether being "inspired by Instagram friends" constitutes a form of peer pressure remains an important question for future research on adolescents' digital well-being.

In addition, since it is possible that the characteristics of SNSs other than Instagram may cause social comparison behaviour and its outcomes to differ,[35] future scholarship should compare our findings to the inspirational potentials of social comparisons on platforms such as Pinterest, Facebook, or professional networks such as LinkedIn.

Conclusion

Although most of the extant literature regarding SNS social comparisons has investigated their negative emotional consequences, such comparisons are not inherently detrimental. Indeed, as predicted by social comparison theory, the outcomes of comparisons of ability are likely to be affected by whom individuals compare themselves to and how they process comparison information. This study not only found a positive association between Instagram comparisons and inspiration via benign envy, but also established that the perceived similarity between comparer and their Instagram network moderated this relationship. While not providing causal evidence, our results imply that for adolescent users, social comparisons on Instagram may be more inspiring when they compose their networks mindfully with a focus on similar network members and by avoiding unachievable false role models.

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