

Instagram Unfiltered: Exploring Associations of Body Image Satisfaction, Instagram #Selfie Posting, and Negative Romantic Relationship Outcomes

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Abstract

The purpose of this study was to examine the predictors and consequences associated with Instagram selfie posting. Thus, this study explored whether body image satisfaction predicts Instagram selfie posting and whether Instagram selfie posting is then associated with Instagram-related conflict and negative romantic relationship outcomes. A total of 420 Instagram users aged 18 to 62 years ($M=29.3$, $SD=8.12$) completed an online survey questionnaire. Analysis of a serial multiple mediator model using bootstrapping methods indicated that body image satisfaction was sequentially associated with increased Instagram selfie posting and Instagram-related conflict, which related to increased negative romantic relationship outcomes. These findings suggest that when Instagram users promote their body image satisfaction in the form of Instagram selfie posts, risk of Instagram-related conflict and negative romantic relationship outcomes might ensue. Findings from the current study provide a baseline understanding to potential and timely trends regarding Instagram selfie posting.

Introduction

RESEARCH INVESTIGATING THE predictors of Social Networking Site (hereafter SNS) use, specifically Facebook and Twitter use, has gained increasing attention over recent years.^{1–3} Moreover, several studies have also examined the “dark side” effects associated with both Facebook and Twitter use, specifically demonstrating associations between SNS use and negative romantic relationship outcomes.^{4,5} However, there is a limited amount of research examining the predictors and “dark side” effects associated with Instagram use. Therefore, the current study explores whether body image satisfaction predicts Instagram selfie posting and whether Instagram selfie posting is then associated with “dark side” effects, including Instagram-related conflict and negative romantic relationship outcomes.

History of Instagram

Launching October 6, 2010, as an iPhone app, Instagram was originally designed with the purpose of allowing users to share life moments through pictures as they happen in real time.⁶ Since 2010, Instagram has become one of the most popular web sites in the world ranking as the 17th most

popular site in the United States and 30th globally.⁷ In 2012, roughly 57% of Instagram users visited the site at least once a day while 58 photographs were being uploaded each second.⁸ In 2015, Instagram surpassed 300 million active users with more than 70 million average photos uploaded per day.⁸

Instagram provides smartphone users (iPhone and Android) the ability to capture photos using their phone’s camera through the Instagram app.⁶ Once a photo or video has been captured, users can edit the image and apply filter(s) before sharing with others. In addition, users can add a description of the photo, tag people who are depicted in the photo, and can also add the location where the picture was captured.⁶ Once users are satisfied with the appearance of their photo, they can directly send their photo to the Instagram newsfeed. Once the image has been shared to the newsfeed, the users’ followers have the option of liking the photo or commenting underneath the image. Users can see which followers have liked or commented on each picture by clicking the “news” tab, or users can select the “following” tab to stay up to date on the liking and commenting activity of their romantic partners, friends, family, or followers for whom users have no offline relationship.

Despite the popularity and user friendly interactivity of Instagram, little is known about the psychological factors

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that are associated with Instagram use, specifically Instagram selfie posting. Indeed, as Fox and Rooney⁹ recently noted, at this moment in time there is a limited amount of research that has examined how people manipulate their self-presentation on SNSs and there is especially a limited amount of research examining the relatively new phenomenon of “selfie posting.”

Instagram selfie posting

The term “Selfie,” which earned word of the year in 2013 by Oxford Dictionary,¹⁰ is defined as “a photograph that one has taken of oneself, typically one taken with a smartphone or webcam and uploaded to a social media web site.”¹⁰ As an emerging form of online body display, psychology and communication scholars have examined how personality traits influence selfie posting behaviors.^{9,11} In fact, research has shown narcissism, psychopathy, and insularity to be associated with increased sharing of images of one’s self to SNSs.^{9,11–13} Additional research posits, however, that SNSs help to empower users by serving as a platform for self-representation.¹⁴ Although scholars have examined a wide range of personality variables in relation to selfie posting behaviors, research investigating body image variables, such as body image satisfaction, remains unexamined in the role of social media use.

Body image satisfaction

Body image is considered to be the mental picture people form of their physical selves,¹⁵ which is culturally and socially constructed¹⁶ and used to monitor their appearances through comparison to others’ physiques.^{16,17} Recently, assessment of one’s body image through online body display has become popular due to the emergence of SNSs.¹⁸ Online body display refers to an individual exposing his or her body in an online public space where it can be freely accessed.¹⁹ Existing research on online body display has shown that SNS users are likely to share images of one’s self to attract mates or to express dominance.¹¹ Moreover, Bergman et al.¹¹ found that SNS users are also likely to share images of one’s self for self-promotion purposes, including projecting positive self-image. Following this line of research, we surmise that when Instagram users are satisfied with their overall body image (i.e., positive self-image), self-promotion of their body satisfaction may take the form of online behaviors, specifically as Instagram selfie posts.

H1: Body image satisfaction and Instagram selfie posting will be positively related.

SNSs’ effects on romantic relationships

Although research on the interpersonal consequences of selfie posting remains limited, recent work by psychology and communication scholars has clearly shown that excessive SNS use, including Facebook and Twitter use, can have damaging effects on health³ and romantic relationship outcomes.^{4,5} Indeed, several studies have found that excessive SNS use, including partner surveillance and monitoring, posting ambiguous information, and compulsive Internet use, can be detrimental to romantic relationships.^{20–24} For

instance, Clayton et al.^{4,5} found in multiple studies that excessive Facebook and Twitter use was associated with increased relationship conflict pertaining to either the participant’s own SNS use or their current/former partner’s SNS use, which the researchers termed Facebook-related conflict⁴ and Twitter-related conflict.⁵ Drawing on this line of work, we suspect that Instagram use might have similar associations with SNS-related conflict. Therefore, we predict that Instagram use, specifically Instagram selfie posting, will be positively related with Instagram-related conflict. In addition, Clayton et al. also found that Facebook-related conflict⁴ and Twitter-related conflict⁵ were positively associated with negative relationship outcomes (i.e., infidelity and breakup/divorce). Therefore, we also hypothesize that Instagram-related conflict will be positively associated with negative romantic relationship outcomes.

H2: Instagram selfie posting and Instagram-related conflict will be positively related.

H3: Instagram-related conflict and negative relationship outcomes will be positively related.

Serial multiple mediator hypothesis

In each study, Clayton et al.^{4,5} tested the direct and indirect effects between SNS use, SNS-related conflict, and negative romantic relationship outcomes. Findings from each of these studies found a nonsignificant direct effect of SNS use on negative relationship outcomes. However, the researchers did find a significant mediational effect for SNS-related conflict, such that SNS use predicted negative relationship outcomes (i.e., infidelity and breakup/divorce) through SNS-related conflict (i.e., jealousy and conflict pertaining to users’ SNS use). These findings suggest that when SNS use becomes problematic in a user’s romantic relationship (i.e., increasing SNS-related conflict), negative relationship outcomes might follow. Based on the findings from each of these studies, we predict a similar mediational model.

H4: Body image satisfaction will be sequentially associated with Instagram selfie posting and Instagram-related conflict, which will be related to increases in negative romantic relationship outcomes.

Method

Participants

To obtain a generalizable sample, this study collected samples from Amazon’s Mechanical Turk (M-Turk) over the course of a 5-day period. M-Turk was regarded as an effective platform for collecting representative samples of the U.S. population.²⁵ M-Turk has been shown to be slightly more diverse than traditional Internet samples and far more diverse than college samples.²⁵ Participants were ($N=420$) Instagram users. All participants were 18 years of age or older and U.S. citizens. In addition, all participants’ former or current romantic partners had an Instagram account. The participants’ ages ranged from 18 to 62 years old ($M=29.3$, $SD=8.12$). Most participants (45%) were Caucasian, 28% Asian, 10% Hispanic, 11% African American, and 6% indicated Native American. A majority of participants (64%) were male.

Materials

A 30-question survey was designed using qualtrics.com. The survey included demographic questions as well as questions about participants' perceived levels of body image satisfaction and number of selfies posted to Instagram. In addition, the survey asked participants whether they had encountered relationship conflict with their current or former partner as a result of their Instagram selfie posting behaviors. The survey also asked participants whether Instagram selfie posting had led to emotional and physical infidelity, breakup/divorce with a current or former partner. See Table 1 for means, standard deviations, correlations, and reliability estimates (Cronbach's α) for variables.

Body image satisfaction. The Body Parts Satisfaction Scale-Revised (BPSS-R)²⁶ is an established two-factor 11-item modification of the original BPSS developed by Berscheid, Walster, and Borhnstedt²⁷ and has shown to have more than adequate internal consistency with a Cronbach's alpha of 0.89.²⁶ Using a Likert scale anchored by 1 = *Very Unsatisfied* to 6 = *Very Satisfied*, participants rated satisfaction with weight, arms, stomach, buttocks, hips, upper thighs, and general muscle tone. Items were summed and divided by 7 to create a mean index for Factor 1 (satisfaction with body; Cronbach's α = 0.93). Factor 2 (satisfaction with face; Cronbach's α = 0.78) of the BPSS-R consisted of participants rating satisfaction with breasts, hair, complexion, and overall face on the same Likert scale as described above. Items were summed and divided by 4 to create a mean index for Factor 2. All items were then averaged to compute an overall body satisfaction composite score ranging from 1 (extremely dissatisfied) to 6 (very satisfied) (BPSS-R composite; Cronbach's α = 0.94).

Instagram selfie posting. To measure how many selfies participants posted of themselves to Instagram, the researchers instructed participants to provide the total number of pictures they had uploaded to Instagram that could be considered as a "selfie." The researchers provided the participants the Oxford Dictionary definition of selfie.¹⁰ The mean of the number of selfies uploaded to Instagram within our sample is $M = 45.14$, $SD = 31.58$. In addition, participants on average used the Instagram platform 31.10 minutes per day ($SD = 36.81$), 6.89 days per week ($SD = 18.0$).

Instagram-related conflict. The current study altered the six items in the Facebook-related conflict scale⁴ (Cronbach's α = 0.85) and Twitter-related scale⁵ (Cronbach's α = 0.94) by Clayton et al. to measure Instagram-related conflict. Such

items included "How often do you have/had an argument with your current/former significant other as a result of your own or your current/former partner's Instagram selfie posting?" and "How often do you have/had an argument with your current/former significant other as a result of the amount of feedback your selfie or your current/former partner's selfie has gained on Instagram?" The questions were answered using a Likert scale ranging from 1 = *Never* to 6 = *Always* (Cronbach's α = 0.96).

Negative relationship outcomes. The current study used negative relationship outcome questions (KR-20 = 0.72) by Clayton et al.^{4,5} to measure the criterion variable. The scale contains three items, including "Has Instagram selfie posting led to a breakup/divorce?" The researchers condensed the answers into dichotomous yes/no answer choices. Once averaged, the Kuder Richardson (KR-20) measure of reliability was 0.76.

Results

We tested the hypotheses using the multiple-mediator model and bootstrapping method as advocated by Andrew Hayes.²⁹ Hayes considers bootstrapping as the most appropriate method of assessment of indirect effects, as it requires no assumption regarding the shape of the sampling distribution of the indirect effect.²⁹ Hayes also argues that unstandardized coefficients are the preferred metric when reporting results of casual modeling.²⁹ Therefore, model 6 (Fig. 1) of Hayes's PROCESS for SPSS using 5,000 bootstrap simulations²⁹ was estimated to derive the total, direct, and indirect effects. The unstandardized path coefficients were used to test hypotheses 1–3, and the point estimate of the specific indirect effect through both mediators was derived as a test of hypothesis 4. Ethnicity and gender were dummy coded and entered with age and length of romantic relationship as covariates in the model.

As can be seen in Figure 1, body image satisfaction was positively associated with Instagram selfie posting ($B = 8.82$, $SE = 1.45$, $p < 0.001$), supporting H1. Next, Instagram selfie posting was positively associated with Instagram-related conflict ($B = 0.027$, $SE = 0.002$, $p < 0.001$), supporting H2. In addition, Instagram-related conflict was positively associated with negative relationship outcomes ($B = 0.131$, $SE = 0.011$, $p < 0.001$), supporting H3. Most pertinent to H4 was the estimate of the indirect effect through both mediators. A bias-corrected bootstrap confidence interval for the product of this path that does not include zero provides evidence of a significant serial multiple mediator effect.²⁹ Indeed, the path

TABLE 1. MEANS, STANDARD DEVIATIONS, CORRELATIONS, AND ALPHA RELIABILITIES^a FOR VARIABLES

	<i>M</i>	<i>SD</i>	1	2	3	4
1. Body image satisfaction	5.05	1.12	(0.94)			
2. Instagram selfie posting	45.14	31.58	0.38***			
3. Instagram-related conflict	3.80	1.54	0.36***	0.66***	(0.96)	
4. Negative relationship outcomes	1.19	0.32	0.24***	0.41***	0.60***	(0.76)

Note: None of the correlations in the current study exceeded the limit of $|0.85|$ set by Klein (2005)²⁸ to indicate collinearity.

^aOn diagonal in parentheses.

*** $p < 0.001$

Andrew Hayes's Serial Multiple Mediation Model

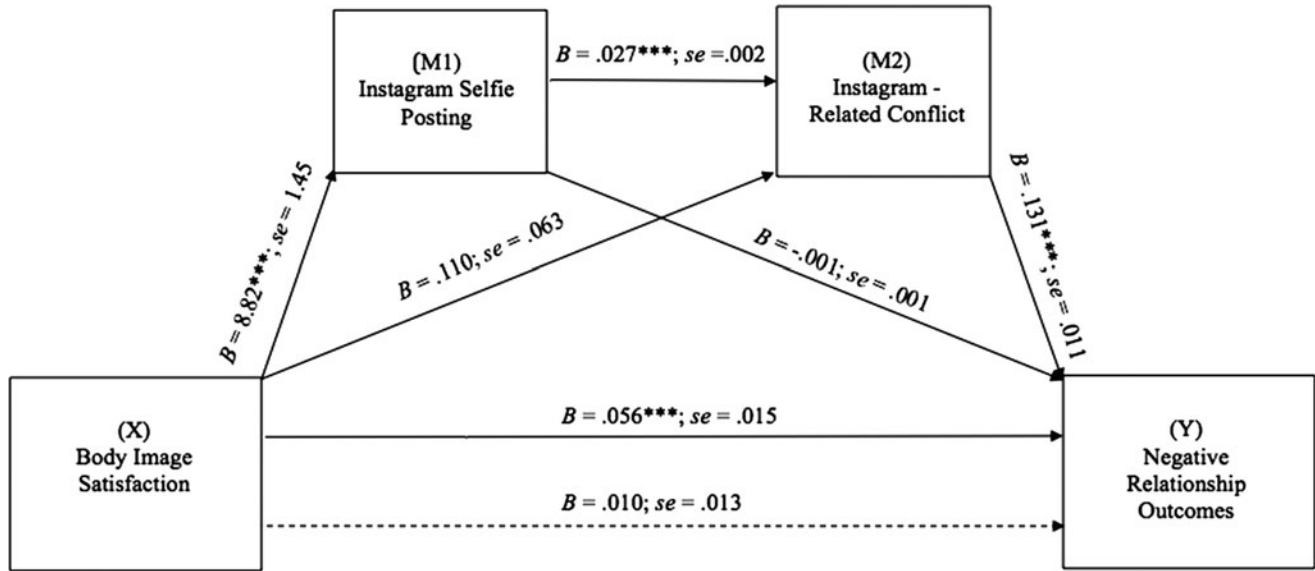


FIG. 1. Unstandardized path coefficients for serial multiple mediation. Note: *Dotted line* denotes the direct effect. *** $p < 0.001$.

from body image satisfaction to negative relationship outcomes through both mediators was significant with a point estimate for the effect of 0.032 and a 95% confidence interval between 0.020 and 0.050, supporting H4. This suggests that indeed a serial multiple mediation has taken place.

In summary, hypotheses 1–3 were supported. Moreover, when taking account of all variables (including covariates) in the model, the total effect of body image satisfaction on negative relationship outcomes was significant ($B = 0.056$, $t = 3.53$, $p < 0.001$), whereas the total direct effect (i.e., effect not mediated by the mediators in the model) was not significant ($B = 0.010$, $t = 0.795$, $p = 0.427$). However, the total indirect effect was significant with a point estimate of 0.045 and a 95% confidence interval between 0.025 and 0.070, see

Figure 1 and Table 2. Thus, the path through both mediators was significant, whereas the direct effect of body image satisfaction on negative relationship outcomes or through either Instagram selfie posting alone or Instagram-related conflict alone was not significant.

Discussion

Several studies have examined the various predictors associated with Facebook and Twitter use, as well as the negative effects associated with such use. However, Instagram use, specifically Instagram selfie posting, has not received the same amount of scholarly attention. Therefore, in this study, we specifically examined whether body image satisfaction

TABLE 2. TOTAL, DIRECT, AND INDIRECT EFFECTS

	Negative relationship outcomes as criterion				
	Effect	SE	<i>t</i>	LLCI	ULCI
Total effect of X on Y	0.056	0.016	3.539***	0.025	0.087
Total direct effect of X on Y	0.010	0.013	0.795	−0.015	0.037
Indirect effect(s) of X on Y	Effect	Boot SE		BootLLCI	BootULCI
Total indirect effect of X on Y	0.045***	0.011		0.025	0.070
Indirect effect 1: X → M1 → Y	−0.001	0.005	—	−0.012	0.008
Indirect effect 2: X → M1 → M2 → Y	0.032***	0.007	—	0.020	0.050
Indirect effect 3: X → M2 → Y	0.014	0.009	—	−0.002	0.035

Note: X=Body Image Satisfaction, M1=Instagram Selfie Posting, M2=Instagram-Related Conflict, Y=Negative Relationship Outcomes. Covariates including age, gender, ethnicity, and length of romantic relationship status were entered simultaneously with all other variables, but are not reported here. Number of bootstrap samples for bias corrected bootstrap confidence intervals: 5,000. Level of confidence for all confidence intervals: 95.

*** $p < 0.001$

predicts Instagram selfie posting and whether Instagram selfie posting is then associated with Instagram-related conflict (i.e., jealousy and arguments pertaining to either the participants' Instagram selfie posting behaviors or the participant's current/former partner's Instagram selfie posting behaviors) and negative romantic relationship outcomes (i.e., infidelity and breakup/divorce). Testing a serial multiple mediator model using bootstrapping methods, the results of this study indicated that body image satisfaction is sequentially associated with increased Instagram selfie posting and Instagram-related conflict, which is related to increased negative romantic relationship outcomes.

The findings from this study have serious implications not only theoretically but also from an applied perspective. Theoretically, when users are satisfied with their body image, self-promotion of their body satisfaction may take the form of online behaviors, specifically as Instagram selfie posts. Perhaps this occurs when an Instagram user meets a fitness goal, finished a day at the salon, or any other potential situation when users feel satisfied with their overall body image. Undoubtedly, Instagram affords users a platform for self-promotion of their satisfied physiques during such times. However, when selfie posting becomes too frequent, our findings support a great deal of research that suggests that SNS use can serve as a catalyst for SNS-related conflict. We speculate that Instagram-related conflict might arise when users begin to monitor their partner's Instagram selfie posting behaviors. To this end, excessive online monitoring may then result in verbal disputes between romantic partners. Moreover, romantic partners may experience jealousy given the amount of feedback (i.e., likes and comments) a selfie has accumulated on Instagram. It is also possible that Instagram selfie posts may capture other users' attention resulting in the development of online relationships with other Instagram users. Unsurprisingly, excessive monitoring, verbal disputes, jealousy, or connecting with other users might then increase the users' chances of experiencing relationship infidelity and dissolution. Thus, from an applied perspective, our findings suggest that practitioners (i.e., marriage counselors) should inquire about online behaviors, including selfie posting when couples have experienced or are nearing infidelity and separation.

Limitations and implications for further research

The current study included several limitations. First, given the correlational nature of this study, causal relationships cannot be inferred. Second, the sample included participants who were told before starting the survey that they would be answering questions regarding body image satisfaction, Instagram use, and relationship outcomes, and this may have skewed the data. Third, some items were left to participants' interpretation, such as the word "excessive," when answering questions about Instagram-related conflict. Finally, social desirability is an unavoidable issue when it comes to self-reported data, particularly when the issues under investigation are sensitive as in the current study.

Although the current study used an atheoretical exploratory approach, the results provide a baseline understanding to potential and timely trends regarding Instagram use, specifically Instagram selfie posting. Thus, future research should aim to investigate the theoretical underpinnings associated

with the relationships among the variables examined in this study. For instance, while it was outside the scope of the current study to test the idealized virtual identity hypothesis,³⁰ future research should examine whether Instagram users promote their real personality in the form of selfie posts or as their idealized versions of themselves.

Conclusion

Despite the need for future research, the results from our study indicated that body image satisfaction is sequentially associated with increased Instagram selfie posting and Instagram-related conflict, which is related to increased negative romantic relationship outcomes. These findings suggest that when Instagram users' promote their body image satisfaction in the form of Instagram selfie posts, risk of Instagram-related conflict and negative romantic relationship outcomes might ensue.

Author Disclosure Statement

The authors have no commercial interest related to this article, and there are no conflicts of interest for any author of this article.

References

1. Fox J, Moreland JJ. The dark side of social networking sites: An exploration of the relational and psychological stressors associated with Facebook use and affordances. *Computers in Human Behavior* 2015; 45:168–176.
2. Hughes D, Rowe M, Batey M, et al. A tale of two sites: Twitter vs. Facebook and the personality predictors of social media usage. *Computers in Human Behavior* 2012; 28: 561–569.
3. Clayton R, Osborne R, Miller B, et al. Loneliness, anxiety, and substance use as predictors of Facebook use. *Computers in Human Behavior* 2013; 29:687–693.
4. Clayton R, Nagurney A, Smith J. Cheating, breakup, and divorce: is Facebook use to blame? *Cyberpsychology, Behavior, & Social Networking* 2013; 16:717–720.
5. Clayton R. The Third Wheel: the impact of Twitter use on relationship infidelity and divorce. *Cyberpsychology, Behavior, & Social Networking* 2014; 17:425–430.
6. Instagram, Inc. (2015) Instagram statistics. <https://instagram.com/press/> (accessed Mar. 1, 2015).
7. Alexa Web Information. Amazon Inc. Instagram site overview (2014) www.alexa.com/siteinfo/instagram.com 91/ (accessed Aug. 13, 2014).
8. Social Media Update. Pew Research Center. (2014) www.pewinternet.org/2013/12/30/social-media-update-2013/ (accessed Aug. 13, 2014).
9. Fox J, Rooney MC. The dark triad and trait self-objectification as predictors of men's use and self-representation behaviors on social networking sites. *Personality and Individual Differences* 2015; 76:161–165.
10. Oxford Dictionaries. Definition of selfie. (2014) www.oxforddictionaries.com/us/definition/american_english/selfie (accessed Aug. 13, 2014).
11. Bergman SM, Fearington ME, Davenport SW, Bergman JZ. Millennials, narcissism, and social networking: what narcissists do on social network sites and why. *Personality & Individual Differences* 2011; 50:706–711.
12. Marwick A. Instafame: luxury selfies in the attention economy. *Public Culture* 2015; 1:137–150.

13. Twenge JM, Campbell KW. (2009) *The narcissism epidemic: living in the age of entitlement*. New York: Simon and Schuster.
14. Lee DH. Women's creation of camera phone culture. *Fibreculture Journal* 2005; 6.
15. Fisher S. (1986) *Development and structure of the body image*. Vol. 1 & 2. Hillsdale, NJ: Earlbaum.
16. Rudd NA, Lennon SJ. Body image: linking aesthetics and social psychology of appearance. *Clothing and Textiles Research Journal* 2001; 19:120–133.
17. Festinger L. A theory of social comparison processes. *Human Relations* 1954; 7:117–140.
18. Beuf A. (1990) *Beauty is the beast*. New York: University of Pennsylvania Press.
19. Chan L, Tsang H. (2014) "Hey, see my body!" An Exploratory study of body display on Facebook among Chinese young adults. Paper presented at the International Communication Association Annual Conference in Seattle, WA.
20. Joinson AN. (2008) "Looking at," "looking up" or "keeping up with" people? Motives and uses of Facebook. In *Proceedings of the 26th Annual SIGCHI Conference on Human Factors in Computing Systems* (Florence, Italy, April 5–10, 2008), CHI'08. New York: ACM Press, pp. 1027–1036.
21. Utz S, Beukeboom CJ. The role of social network sites in romantic relationships: effects on jealousy and relationship happiness. *Journal of Computer Mediated Communication* 2011; 16:511–527.
22. Tokunaga RS. Social networking site or social surveillance site? Understanding the use of interpersonal electronic surveillance in romantic relationships. *Computers in Human Behavior* 2011; 27:705–713.
23. Kerkhof P, Finkenauer C, Muusses, LD. Relational consequences of compulsive internet use: a longitudinal study among newlyweds. *Human Communication Research* 2011; 37:147–173.
24. Papp LM, Danielewicz J, Cayemberg C. "Are we Facebook official?" Implications of dating partners' Facebook use and profiles for intimate relationship satisfaction. *Cyberpsychology, Behavior, & Social Networking* 2012; 15:85–90.
25. Buhrmester M, Kwang T, Gosling S. Amazon's Mechanical Turk a new source of inexpensive, yet high-quality, data? *Perspectives on Psychological Science* 2011; 6:3–5.
26. Petrie T, Tripp M, Harvey P. Factorial and construct validity of the body parts satisfaction scale-revised: an examination of minority and nonminority women. *Psychology of Women Quarterly* 2002; 38:213–221.
27. Berscheid E, Walster E, Bohrnstedt G. The happy American body: a survey report. *Psychology Today* 1973; 7:119–131.
28. Klein RB. (2005) *Principles and practice of structural equation modeling*, 2nd edition. New York: Guilford Press.
29. Hayes AF. (2013) *Introduction to mediation, moderation, and conditional process analysis: a regression-based approach*. New York: Guilford Press.
30. Back MD, Stopfer JM, Vazire S, et al. Facebook profiles reflect actual personality, not self-idealization. *Psychological Science* 2010; 21:372–374.

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