Self-objectification in women predicts approval motivation in online self-presentation

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Author Note

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Abstract

Researchers have examined self-objectification—viewing oneself as an object rather than a subject—in terms of its impact on intrapersonal factors, such as mental health and cognitive performance. However, few have examined how self-objectification relates to interpersonal factors despite the importance of these factors for interpersonal outcomes. The present research addressed this gap by testing the impact of self-objectification on social approval motivation among women. Study 1 (N = 103) found that individual differences in self-objectification correlated positively with approval motivation. Study 2 (N = 94) replicated these results and found that women who reported higher self-objectification were more willing to modify their social media profile pictures unrealistically. In Study 3 (N = 100), higher self-objectifying women were more willing to unrealistically modify their profile pictures even if this exceeded normative levels, which was replicated in Study 4 (N = 199). These results suggest that women's self-objectification is associated with a desire for approval from others and this desire manifests in a willingness to modify self-presentation.

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People have long used self-presentation—an effort to create the best possible impression (Leary, 1995)—as a way to gain approval from others (Baumeister & Tice, 1986; Leary & Kowalski, 1990). Self-presentational strategies are highly relevant in virtual interpersonal interactions (e.g., social media; Seidman, 2013), in which self-presentation modifications may require no more than a few presses on the keyboard to add a desirable personal characteristic to a profile or smooth a blemish on one's image (Chae, 2017; Ellison et al., 2006). The temptation to improve one's self-presentation may therefore be particularly prominent in virtual media contexts and may link to appearance-related anxieties (Engeln et al., 2020; Fardouly & Vartanian, 2016).

Fardouly et al., (2015a, 2015b, 2018) found that self-objectification, which is the tendency to see oneself as a physical, often sexualized, object (Fredrickson & Roberts, 1997), is accompanied by elevated anxiety about self-presentation in online interactions. Self-objectification may therefore increase approval motivation and a desire for positive responses from others (Rudolph et al., 2005). In this respect, approval motivation reinforces rather than liberates individuals' social identities online and influences online social interactions with others. For example, increased approval motivation may alter what information people share online (e.g., whether to post self-images) and to what extent people edit the content they post online (e.g., whether to manipulate photos).

In the present studies we examined if high self-objectifying women display a stronger approval motivation than low self-objectifying women, and if this link manifests in changes to self-presentation, especially in formats that are prevalent on social media platforms (e.g., profile pictures). Statistics showed that more than half of the world population are social media users. As a case in point, 7 out of 10 people in the USA use at least one social media platform (Chaffey, 2021; Pew Research, 2021). Such research is both

timely and important: not only is social media now a ubiquitous feature of human interactions, but it also presents a context that may differ from face-to-face interactions in ways that are particularly germane to processes of approval motivation, objectification, and self-presentation. Moreover, the online context highlights ways in which one can actively manage objective (objectified) features of the self-image. However, previous research has not examined self-objectification as an antecedent of approval motivation. The present study seeks to address this gap in research to provide new theoretical insights about the relations among these variables.

We focused on self-objectification among women as studies have well-documented that women experience more objectification in their daily lives than men (Rollero, 2013; Swim et al., 2001) and experience more negative consequences than men in the face of objectification (Hobza & Rochlen, 2009). Furthermore, statistics show that social media use is particularly popular among women (Pew Research, 2021). Recent research has also found that using social network sites is linked to women's self-sexualization and self-objectification (e.g., Fardouly et al., 2018; Ramsey & Horan, 2018). Results of studies that examined gender difference in the use of social media are somewhat mixed; some found no moderation of gender on the effect of sexualizing media use on self-objectification (Karsay et al., 2018), some found that use of social media affected women more negatively than men; Thompson & Lougheed (2012) showed that significantly more female Facebook users agreed that photos on Facebook caused them to experience body dissatisfaction than it did for male users. Furthermore, studies examining self-presentation on social network sites have found that, compared with men, women experienced more social pressure on physical appearance and reported more self-presentational concerns (Haferkamp et al., 2012; Kapidzic & Herring, 2015). Accordingly, dedicating studies to examine the social media self-presentation among women in particular is a valuable and potentially impactful endeavour.

Approval Motivation and Self-Presentation

Approval motivation refers to the tendency to seek positive responses from others (Rudolph et al., 2005) and is an important element in social behaviour (Martin, 1984; Homans, 1961). Approval motivation comes with an increased desire for other people's admiration (Fehr & Falk, 2002) and to be concerned more greatly about "what others say" (Karaşar & Baytemir, 2018). It orients people towards obvious displays of obedience and conformity to authority (Marlow & Crowne, 1961; Strickland & Crowne, 1962), behaving according to cultural norms (Crowne et al., 1964; Horton et al., 1963) and to seeming more socially conventional and dependent (Paulhus, 1991).

Approval motivation goes hand-in-hand with modified self-presentation. Self-presentation involves an effort to employ varying self-promotional techniques (e.g., humblebragging; Sezer et al., 2018) to create the desired persona for a target audience in the attempt to fulfil a social goal (Leary, 1995; Schlenker & Pontari, 2000). Classic, strategic self-presentation involves using self-enhancing presentations to create the best possible impression (Schlenker & Leary, 1982) and to reduce negativity in self-images (Baumeister, 1982; Baumeister & Jones, 1978).

Recent work has drawn attention to the emerging importance of approval motivation and self-presentation in online social contexts, given the popularity of sites such as Instagram and TikTok (Audrezet et al., 2018; Bhandari & Bimo, 2020; Chae, 2017; Skogen et al., 2021). Indeed, the emergence of online social media has changed how people establish relationships (Choi et al., 2011; Serafinelli, 2017; van Dijck & Poell, 2013). Social network site users actively select how to portray themselves and revise the information they disclose (Fox & Vendemia, 2016; Lee-Won et al., 2015; Ward, 2016) to facilitate social relationships (Nadkarni & Hofmann, 2012) and maintain peer approval (Rui & Stefanone, 2013; Yau & Reich, 2019). More specifically, research has found that need for popularity and social

acceptance (e.g., in the forms of ‘likes’ or comments; Ramsey & Horan, 2018) is a strong and consistent predictor for self-presentational behaviours in social media (e.g. editing profile information; Utz et al., 2012). Based on this previous work, we believe that the influence of approval motivation will be evident in participants’ social network site self-presentations. Therefore, in our studies, we adopted a novel online self-presentation measure as an indicator of approval motivation in the social media context to examine the relationship between self-objectification and approval motivation.

Approval motivation tends to be lower among those with high self-esteem and those who are emotionally stable, and higher among people who have lower self-esteem (Larsen et al., 1976; Lemay & Ashmore, 2006), have undesirably high body weight (Miniszewska & Kogut, 2016), or experience depression symptoms (Cambron et al., 2010; Crocker et al., 2003). Those high in approval motivation also report elevated social anxiety about others’ impressions of them (Chiba et al., 2009; Leary & Kowalski, 1995; Lee & Jang, 2019; McCord et al., 2014). In the present research, we examined another potential antecedent of approval motivation that has not been examined before: self-objectification.

Self-Objectification

Fredrickson and Roberts (1997) formulated objectification theory as a comprehensive framework for understanding, researching, and modifying women’s experience as sexualised objects in a sociocultural context. In this theoretical framework, sexual objectification is conceptualised as the experience of being treated as a body or body parts and evaluated primarily for its instrumentality to others (Fredrickson & Roberts, 1997). Accordingly, when living in a culture that emphasises women’s appearance, women who are high in trait self-objectification tend to value their physical beauty to a great extent. This phenomenon of women viewing themselves and monitoring their physical appearance through an external observational standpoint is called self-objectification (McKinley & Hyde, 1996). By viewing

their own body through this objectified lens, self-objectified women tend to value their observable body appearance (e.g., measurements, and sex appeal) over their non-observable body competence (e.g., strength, and fitness; Noll & Fredrickson, 1998).

Understanding the consequences of self-objectification in women helps understand their personal and social well-being. A primary consequence of self-objectification is the experience of body-related disturbance, which may exhibit in forms of body shame, body dissatisfaction or appearance anxiety (see Tiggemann, 2011, for a review). Body image disturbances can, in turn, be associated with depression symptoms (Miner-Rubino et al., 2002; Tiggemann & Kuring, 2004), eating disorders (Calogero et al., 2005; Muehlenkamp & Saris-Baglama, 2002), and sexual dysfunction (Calogero & Thompson, 2009; Steer & Tiggemann, 2008).

Recent research links self-objectification and body-related disturbance to the use of social media. Instead of general social media use, self-objectification is specifically associated with appearance-related photo activity on social media (e.g. selfie editing and posting) (Caso et al., 2020; Cohen et al., 2018; Lamp et al., 2019; Lee & Lee, 2021), and in turns deepen internalization of beauty ideals (e.g. thinness drive) (Lee & Lee, 2021) and appearance comparison (Engeln et al., 2020; Fardouly et al., 2015b).

Although it is important to understand the psychology of self-objectification, little research has documented the impact of objectification on women's social well-being. It is plausible that self-objectification influences women's interpersonal interactions, given that women's sense of self can shift from an agentic (subjective) one to that of an object (Quinn et al., 2006). Self-objectifying women may thus act more 'object-like' during interpersonal interactions (Saguy et al., 2010). For example, research conducted by Saguy and colleagues (2010) pointed out that when women were objectified, they spent less time talking to men during social interactions. Fredrickson et al. (1998) suggested that self-

objectified women may also focus on observable body attributes in the service of others (e.g., "How do I look, and how does that please others?") rather than focusing on their own first-person point of view (e.g., "What am I capable of?" or "How do I feel?"). This change in perspective may foster women's internalized need to constantly present, maintain, and improve a desired physical appearance to please others. Our research builds and extends the work on objectification and women's social behaviour by identifying a further possible mechanism that underlies women's objectification: approval motivation and self-presentation.

Self-Objectification, Approval Motivation, and Self-Presentation

If individuals perceive themselves as mere objects, then they may be inclined to view themselves lacking control, agency, or value. They may accordingly defer more to judgements and evaluations made by other people. Indeed, high level self-objectifiers spend more time and emotional resources considering how others view them (Quinn et al., 2011). Thus, self-objectifying women may rely more on external sources (e.g., friends, families) rather than internal ones (e.g., own ideas, beliefs) to define their self-worth. Furthermore, people whose self-worth is drawn from external sources show higher approval motivation (Crocker et al., 2003). Therefore, we predicted that self-objectification is linked with heightened approval motivation in women.

Online self-presentation offers an opportunity for social media users to articulate and validate their positive self-concept (Stern, 2008). As mentioned above, need for popularity is a strong predictor for photo-editing behaviours on social media (Ramsey & Horan, 2018; Utz et al., 2012). Communication studies also suggest that social media users of all age use online self-presentation as a tool to present an 'ideal self'. For example, Ellison et al., (2006) found in a qualitative study that adult social media users expressed a desire to present an 'ideal self' through tactics such as managing their profiles. Mascheroni et al. (2015) and Siibak (2009)

found that teenage girls felt pressured to always look ‘perfect’ in their online pictures as a means of social acceptance by peers.

Taken together, we proposed that online self-presentation is actively used as strategy to achieve and maintain social approval. Approval motivation is in this context operationalized as the effort people put on their self-presentation on social media.

Present Research

We tested the relationship between self-objectification and approval motivation. Study 1 examined the correlation between trait self-objectification and approval motivation. Study 2 added a novel self-presentation measure by asking participants to choose an appropriate aesthetic filter for an online profile picture. Study 3 investigated in greater detail what self-presentational strategy women use to gain approval by varying, between conditions, information about the normative expectations regarding the use of such aesthetic filters. Study 4 expanded on these findings by comparing self-presentation in the context of a filter that modified facial features versus one that modified the background of the image.

We hypothesised that trait self-objectification among women was positively correlated with (a) approval motivation (H1); and (b) willingness to modify their profile pictures to a greater extent (H2). Furthermore, we hypothesized that, when given a normative modification level (i.e., what others find best looking), women with higher trait self-objectification modified their photos more towards the normative level (H3). This work is the first work to examine the direct link between self-objectification and approval motivation, which extends the limited empirical investigation on self-objectification and interpersonal motivations. It provides potential insights in how self-objectification can place a woman in a vulnerable place not only regarding mental health and cognitive abilities but also regarding their social well-being. We furthermore go beyond the previous work on approval motivation

methodologically by introducing a novel self-presentation measure in the social media context.

To ensure clarity in the scope of our investigation, when recruiting participants for this project, we only included data from women whose birth sex was assigned to female and who also self-identified as a woman.

All four studies received ethical clearance from the first author's institutional research ethics committee.

Study 1

We first tested if trait self-objectification is correlated with approval motivation. We hypothesised that women high in trait self-objectification tended to have higher approval motivation (H1). Approval motivation can operationalize in at least two forms: social desirability (i.e., to avoid negative feedback) (measured by the Marlowe-Crowne Social Desirability Scale, 1982) and social approval (i.e., to actively obtain positive responses; Rudolph et al., 2005) (measured by the revised Martin-Larsen Approval Motivation Scale, 1984). As we were uncertain whether self-objectification would be correlated with one or both forms of approval motivation, we used both operationalizations in this first study.

Method

Participants and design. Participants were 103 women (M_{age} = 31.30, *SD* = 11.19, range 18–72) recruited through the online crowdsourcing platform *Prolific.co*, which generates high-quality online data (Peer et al., 2017). This sample size granted a power of $(1 - \beta) = 0.80$ to detect a correlation sized $\rho = 0.27$, adopting a (two-sided) Type-I error rate of $\alpha = 0.05$. The sample was predominantly White (87%), with 4% mixed ethnic group, 4% Asian, 3% Hispanic and 2% Black. The study followed a correlational design and took place online. Each participant received £1 for their participation.

Procedure and materials. Participants were told in the information sheet that the aim of the study was to understand their personality and traits, thus revealing only the general theme of the study rather than its specific hypotheses. At the end of the survey, participants answered the question "What do you think is the purpose of the study?" to check if any participants guessed to aim of the study; none of them did.

After giving informed consent, participants completed two scales that measured their trait self-objectification: the Self-Objectification Questionnaire (SOQ; Noll & Fredrickson, 1998) and the body surveillance subscale from the Objectified Body Consciousness Scale (OBCS; McKinley & Hyde, 1996). In the Self-Objectification Questionnaire, participants were presented with five appearance-based attributes (*physical attractiveness, weight, sex appeal, measurements, firm/sculpted muscles*), and five competence-based attributes (*health, strength, energy level, physical coordination, physical fitness*). Participants ranked all 10 attributes on their importance to their physical self-concept. Rank 9 reflected the *greatest impact on my physical self-concept* and Rank 0 represented the *least impact on my physical self-concept*. Self-objectification scores were calculated by subtracting the sum of the five competence-based rankings from the sum of the five appearance-based rankings, resulting in a possible score range between -25 and 25, with higher scores indicating higher self-objectification. The body surveillance subscale of the Objectified Body Consciousness Scale contained eight items, such as "I rarely compare how I look with how other people look," that were rated on a 7-point scale (1 = *strongly disagree*, 7 = *strongly agree*). The scores were averaged (α = .87), with higher scores indicating more self-surveillance.

Then, participants completed two scales that measured their approval motivation: Participants first completed the Marlowe-Crowne Scale (Reynolds's Form C; Reynolds, 1982) that was used to measure how likely the respondent is to give answers that sound good instead of answers that are true. Respondents rated 13 items from 1 (*totally disagree*) to 7

(*totally agree*), such as "No matter who I'm talking to, I'm always a good listener." Scores were averaged ($\alpha = .73$), with a higher score indicating higher social desirability. Next, we measured participants' approval motivation with the revised Martin-Larsen (1984) Approval Motivation Scale. Participants rated 20 items from 1 (*totally disagree*) to 5 (*totally agree*), such as "It is wise to flatter people." Scores of this scale were averaged ($\alpha = .74$). Participants then reported demographic questions, guessed the purpose of the study, were thanked, debriefed, and rewarded.

As in previous studies (e.g., Cohen et al., 2018; Fardouly et al., 2015b), items of all the scales were not randomized; they were presented to all participants in the order that these items had in the corresponding original scales. We did so in the current and other studies.

Results and Discussion

We calculated the zero-order correlations between the four measures. Trait self-objectification measured by Self-Objectification Questionnaire was positively correlated with approval motivation, $r(101) = .32$, $p = .001$, 95% confidence interval (CI) = [0.13, 0.48], and the same was true for body surveillance, $r(101) = .47$, $p < .001$, 95% CI = [0.3, 0.61]. This confirmed that those higher in self-objectification expressed stronger approval motivation. Neither of the trait self-objectification measures were correlated with the Marlowe-Crowne Social Desirability Scale, $r(101) = -.17$, $p = .09$, 95% CI = [-0.35, 0.02], $r(101) = -.19$, $p = .06$, 95% CI = [-0.37, 0.00], respectively.

The result of Study 1 suggested that it was unlikely that trait self-objectification was associated with social desirability. Therefore, in the following studies, we discarded the Marlowe-Crowne Social Desirability Scale.

Study 2

In Study 2, we sought to replicate the association we found in Study 1, and added a new measure. Specifically, we measured if participants higher in self-objectification

expressed a greater willingness to modify their self-presentation (H2). In keeping with the contemporary prevalence of social media platforms, this self-presentation measure took the form of selecting the level of an aesthetic filter for a hypothetical social network site profile picture.

Method

Participants and design. Participants were 94 women (M_{age} = 31.85, *SD* = 10.74, range 18–62) recruited from Prolific. Our sample afforded $(1 - \beta) = 0.80$ power to detect a population correlation sized $\rho = 0.28$, adopting a (two-sided) Type-I error rate of $\alpha = 0.05$. Most of the participants were White (87%), with 4% mixed ethnic group, 4% Black, 3% Asian, and 2% Hispanic. The study had a correlational design and was completed online. Participants received £1 for completing the short study.

Procedure and materials. Participants first completed the two self-objectification measures as in Study 1 (SOQ; Noll & Fredrickson, 1998; OBCS, McKinley & Hyde, 1996). Participants then completed a short puzzle (tracing a path) as a filler task. Next, participants were introduced to a photographic filter app that helps people retouch pictures of their faces with a few simple clicks. Participants were shown different degrees of facial modification with sample photos, after which they were asked to choose a modification level they preferred to apply on their own photo. Specifically, participants were asked to read the following script:

> It is much more difficult than it appears to take a nice portrait photo of a person. Even for many professional photographers, they also need to use the aid of Photoshop to make the portrait more appealing. Nowadays, there are a lot of apps that can allow us to easily modify our photo by simply clicking buttons on the phone. Here is an app called BeautyCam that can change a photo by adjusting skin tones and textures, exaggerating eyes, and adjusting face features, etc. It provides seven different levels

of adjustments from very natural (Level 1) to very smooth (Level 7). Below are some examples to show you what different levels of modifications look like.

Underneath this passage participants saw a matrix that contained five different faces, each occupying a single row with columns providing different filter gradations (Figure 1), scored from 0 (*Original*) to 7 (*Level 7*), with a higher score representing greater modification. The five female faces represented five different ethnicities. Participants were then asked to imagine what their own photo would look like in this filter with these eight different levels of modification. Then, participants indicated which level of modification they would prefer if preparing a profile picture of their own to front a new online social platform. We refrained from asking participants to take and/or upload their own images to the app and instead used illustrative photos for privacy and data protection concerns. Participants then completed the revised Martin-Larsen (1984) Approval Motivation Scale followed by reporting demographic information and guessing the purpose of the study. Participants were thanked, debriefed, and rewarded upon completion.

Results and Discussion

The Self-Objectification Questionnaire operationalizes the construct of self-objectification as the difference between participants' perceived importance of appearance versus competence-based body attributes (Moradi & Huang, 2008) and the Objectified Body Consciousness Surveillance subscale assesses level of reported habitual body monitoring (Moradi & Huang, 2008). Both scales focus on the same component of trait self-objectification—preoccupation with one's physical appearance (Kahalon et al., 2018; Roberts, 2004). Some past research conceptualised the two as the same construct (e.g., Hill & Fischer, 2008; Liss et al., 2011). Furthermore, previous research went as far as to aggregate the two scales to form a self-objectification composite (Miner-Rubino et al., 2002). We *z*-scored and combined these two scales as a composite measure of trait self-objectification for

the main analysis accordingly for this study, which should have benefited measurement accuracy. Given that the formats of their response scales differed, we first standardised them and then averaged their scores (α = .80). This trait self-objectification aggregate was positively correlated with both the modification level of the aesthetic filter, $r(92) = .21$, $p = .045$, 95% CI = [0.01, 0.40] and approval motivation (α = .75), $r(92) = .35$, $p = .001$, 95% CI = [0.16, 0.52]. The modification level of the filter was also positively correlated with approval motivation, $r(92) = .23$, $p = .025$, 95% CI = [0.03, 0.41].[1]

Replicating and extending the findings of Study 1, these results indicated that women who were higher in trait self-objectification expressed a higher approval motivation and were more willing to modify their physical appearance.

Study 3

Studies 1 and 2 indicated that higher levels of self-objectification corresponded with elevated approval motivation and a greater willingness to modify a physical representation. In Study 3, we examined this in greater detail. If the willingness to modify the self-presentation represents an attempt to gain approval from others, then as we hypothesised, we may find that self-objectifiers adjust the modification levels to those normative standards (i.e., what others find best looking) (H3). Thus, we set out to manipulate appearance norms in this study to see if participants prefer to modify their profile photos more towards the normative standards. Specifically, Study 3 incorporated two conditions where we told participants that others tended to prefer either a smaller or a higher level of modification.

[1] Trait self-objectification measured by the OBCS was positively correlated with the Approval Motivation Scale, $r(92) = .37$, $p < .001$, 95% CI = [0.18, 0.53] and significantly correlated with the modification level of the aesthetic filter, $r(92) = .21$, $p = .041$, 95% CI = [0.01, 0.40]. Trait self-objectification measured by the SOQ was positively correlated with approval motivation, $r(92) = .22$, $p = .037$, 95% CI = [0.02, 0.40] but not significantly correlated with the modification level of the filter, $r(92) = .14$, $p = .184$, 95% CI = [-0.06, 0.33].

Method

Participants and design. Participants were 100 women (M_{age} = 31.93, *SD* = 10.34, range 18–59) recruited from Prolific in exchange for £1.20 for their online participation. This sample size granted a power of $(1 - \beta) = 0.80$ to detect an effect size of $f^2 = 0.08$ (adopting a two-sided $\alpha = 0.05$) for a multiple regression with three predictors. Of the participants, 92% were White, 5% were Black, and 3% were Asian. The study adopted a two-cell between-subjects design (low or high modification level of aesthetic filter condition).

Procedure and materials. The procedure of this study was identical to Study 2 except that we randomly assigned participants to one of the two conditions that affected (only) the profile picture modification task: participants in the low modification condition were informed, "According to an online user feedback survey, Level 2 of the modifications is what most people find best looking." Those in the high modification level condition were instead told that this was the case for Level 6. We further emphasised these instructions by highlighting the corresponding column of the picture matrix. As in Study 2, we adopted the same *demo photos* approach which participants indicated the preferred filter level by imagining it applied to their own profile picture.

Results and Discussion

We again standardised and then averaged the Self-Objectification Questionnaire and the Body Surveillance Scale scores ($\alpha = .89$, $r = .46$, $p < .001$) into an overall measure of trait self-objectification as in Study 2. As hypothesised, trait self-objectification was positively correlated with both approval motivation ($\alpha = .79$) (H1), $r(98) = .27$, $p = .006$, 95% CI = [0.08, 0.44], and the modification levels of aesthetic filter task, $r(98) = .23$, $p = .023$, 95% CI

= [0.03, 0.41] (H2). Approval motivation and the modification level of aesthetic filter were not correlated, $r(98) = .09$, $p = .397$, 95% CI = [-0.11, 0.28].[2]

Next, we examined if, and how, the modification level condition moderated the relationship between self-objectification and filter modification level. For this purpose, we entered the filter modification level as a dependent variable in a multiple regression analysis with as predictors (a) mean-centred trait self-objectification, (b) the effect-coded filter modification level condition (-1 = *low modification level*, 1 = *high modification level*), and (c) the mean-centred self-objectification × effect-coded filter modification level condition interaction. Together, these predictors explained 16% of the variance in approval motivation, $F(3, 96) = 6.12$, $p = .001$, $R^2 = .16$; Figure 2 displayed the predicted scores in this model.

Overall, those who possessed higher levels of trait self-objectification preferred significantly greater modification levels of the aesthetic filter, $B = .48$ $\beta = .22$, $t = 2.27$, $p = .026$, 95% CI = [0.06, 0.90]. Participants who were told the high (vs low) modification level was the optimal level also selected, overall, higher modification levels themselves, $B = .62$, $\beta = .33$, $t = 3.52$, $p = .001$, 95% CI = [0.27, 0.97], which indicated that our manipulation worked as expected. However, contrary to our hypothesis (H3), we did not find a significant interaction between self-objectification and the modification level condition, $B = -.01$, $\beta = -.01$, $t = -0.05$, $p = .96$, 95% CI = [-0.43, 0.41].

These results indicated that, in both conditions, women who were high in trait self-objectification did not choose to modify their photos towards a degree that was deemed to be (normatively) optimal but instead chose to modify their photos to a greater extent, which was contrary to one of our hypotheses (H3). However, the mechanism underlying this process

[2] Trait self-objectification measured by the OBCS was positively correlated with the Approval Motivation Scale, $r(98) = .26$, $p = .009$, 95% CI = [0.07, 0.43] and significantly correlated with the modification level of filter, $r(98) = .25$, $p = .012$, 95% CI = [0.06, 0.43]. Trait self-objectification measured by the SOQ was positively correlated with approval motivation, $r(98) = .21$, $p = .040$, 95% CI = [0.01, 0.39] but not significantly correlated with the modification level of filter, $r(98) = .14$, $p = .168$, 95% CI = [-0.06, 0.33].

remained unclear. Of course, it is possible that despite our best efforts to manipulate these norms, participants still believed that higher levels of modification generally cast them as more attractive to others. Past research also provided evidence that smoothened images (as per the filter) are often perceived as more attractive (e.g., Kagian et al., 2008). This general link between perceived attractiveness and filter levels may help explain why our finding here were different than hypothesized. Both surprised and intrigued by this unexpected finding, we set out to test H3 again in Study 4 with a different design.

Study 4

In the previous study, we tried to manipulate the normative attractiveness level of a photo filter; in one condition we told participants that a relatively low-level filter led to the most attractive result, whereas in another condition we told them that a high-level filter produced the most attractive image. We anticipated, but did not find, that high self-objectifying women would gravitate towards these normative filter levels, reflecting their desire for approval from others. We found, instead, that high self-objectification was associated with generally higher selected filter levels, regardless of these manipulated norms. Why might this have happened? One possibility is that our manipulation was not strong enough to override the belief that high filter levels improve appearance, perhaps especially among high self-objectifiers. Specifically, consistent with earlier work (e.g., Kagian et al., 2008), participants may have simply believed that stronger filters improve appearance.

We sought to address this issue in Study 4 by varying experimentally what aspect of the profile picture was affected by the filter: the face features or the image background. We reasoned that if those high in self-objectification selected high filter levels to increase attractiveness, then this may lead them to select higher levels of the face filter, but not necessarily of the image background filter—after all, the image background filter did not alter the face features. Thus, by alternating whether the filter affected the facial features of

the displayed person or merely the image background, we hoped to gain more insights into the reason why high self-objectifiers choose comparatively high filter levels.

Not yet willing to discard our third hypothesis—that high self-objectifiers would select those filters that were described to give the normatively most attractive results—we also manipulated the normative filter level (high versus low), as in Study 3.

Method

Participants and design. Participants were 199 women (M_{age} = 30.20, *SD* = 10.56, range 18–70) recruited through Prolific in exchange for £1.10 for their online participation. This sample size granted a power of $(1 - \beta) = 0.80$ to detect an effect size of $f^2 = 0.07$ (adopting a two-sided $\alpha = 0.05$) for our most comprehensive model—a multiple regression with seven predictors. Of the participants, 83% were White, 7% were Asian, 5% were Hispanic, 2.5% were mixed ethnic group, 1.5% were Black, and 0.5% were Arabic. The study adopted a 4-cell between-subjects design.

Procedures and materials. Procedure and materials were identical to Study 3 except we added a second type of filter to the self-presentation task. Participants were randomly assigned to one of the 2 (modification filter: face vs background) × 2 (modification level: high vs low) conditions. As in Study 3, participants in the low modification level conditions (for both face and background modification) were informed, "According to an online user feedback survey, Level 2 of the modifications is what most people find best looking." Those in the high modification level conditions were instead told that this was the case for Level 6. We further emphasised these instructions by highlighting the corresponding column of the picture matrix. Specifically, those assigned to the background modification condition could select different degrees of blurring out of the image's background, illustrated in Figure 3, instead of different face modification levels. We used a different set of example faces for

both face and background conditions that featured a more consistently prominent background.

Results and Discussion

As in Studies 2 and 3, the score of the Self-Objectification Questionnaire and the body surveillance subscale (α = .80, r = .41, p = .003) were averaged as the indicator for trait-self-objectification in the regression model.

Trait self-objectification was positively correlated with the Approval Motivation Scale, $r(197) = .20$, $p = .005$, 95% CI = [0.07, 0.32], and the filter modification level, $r(197) = .15$, $p = .040$, 95% CI = [0.01, 0.28]. The filter modification level was also positively correlated with the Approval Motivation Scale (α = .80), $r(197) = .20$, $p = .004$, 95% CI = [0.06, 0.33].[3]

We again entered filter modification level as the dependent variable in a multiple regression analysis as well as the predictors: mean-centred trait self-objectification, the effect-coded filter level condition (-1 = *low modification level*, 1 = *high modification level*), the effect-coded filter type condition (-1 = *face filter*, 1 = *background filter*), and each of their two- and three-way interactions. Together, these predictors explained 12% of the variance in approval motivation, $F(7, 191) = 3.81$, $p = .001$. $R^2 = .12$. Figure 4 illustrated the model's predicted values.

The results indicated, consistent with (H2), that higher trait self-objectification was associated with more substantial levels of filter modification, $B = .32$, $\beta = .15$, $t(197) = 2.17$, $p = .03$, 95% CI = [0.03, 0.61]. We also found that setting a high (vs low) optimal

[3] Trait self-objectification measured by the OBCS was positively correlated with the Approval Motivation Scale, $r(197) = .25$, $p < .001$, 95% CI = [0.11, 0.38], but not significantly correlated with the filter modification level, $r(197) = .05$, $p = .511$, 95% CI = [-0.09, 0.19]. Trait self-objectification measured by the SOQ was not positively correlated with approval motivation, $r(197) = .09$, $p = .208$, 95% CI = [-0.05, 0.23], but was significantly correlated with the filter modification level, $r(197) = .15$, $p = .035$, 95% CI = [0.01, 0.28].

modification increased the strength of the chosen modification, $B = .41$, $\beta = .22$, $t(197) = 3.29$, $p = .001$, 95% CI = [0.16, 0.65]. Furthermore, participants opted for higher modification levels of aesthetic filter when using the background blurring filter than the face modification filter, $B = .40$, $\beta = .22$, $t(197) = 3.21$, $p = .002$, 95% CI= [0.15, 0.64]. We did not find any significant two- or three-way interactions between these predictors (Table 1).

These results replicated the findings of Study 3: high self-objectification in women was associated with higher social approval motivation (H1) and greater modification of self-presentations (H2) but not with conformity to appearance norms (contrary to H3). Results of this study helped us eliminate the confounding effect of perceived attractiveness of the filters. Results also confirmed that self-objectification was generally associated with a greater willingness to modify self-presentations regardless of whether this conformed to a (manipulated) normative optimum or whether the applied filter affected the person's face features or the background of the image. However, although this study helped ruling out an explanation for what we found in Study 3, it did not provide further explanation on why our H3 was not supported in these latter two studies.

General Discussion

Self-objectification among women is an important phenomenon relevant to issues such as social anxiety (Lee & Jang, 2019; McCord et al., 2014), undesirable bodyweight (Miniszewska & Kogut, 2016), and low self-esteem (Larsen et al., 1976; Lemay & Ashmore, 2006). The deleterious consequences of self-objectification on women unquestionably impact their social interaction patterns. However, little research in psychology has examined its consequence for interpersonal motivations and behaviours. We expanded the understanding of how objectification influences women's social interaction by examining if self-objectification among women is associated with approval motivation and willingness to modify one's online self-presentation. Across four studies, we consistently found that women

who were higher in self-objectification expressed stronger approval motivation (Study 1-4) and seemed more willing to modify their appearance when presenting themselves in an online arena (Study 2-4). Specifically, Study 3 & 4 showed that high self-objectified women preferred greater modification on their profile photos despite the normative optimal modification level. Study 4 further ruled out a potential explanation for this, namely the perceived attractiveness of the filters.

Research has found links between self-objectification and appearance anxiety/body dissatisfaction (Fea & Brannon, 2006; Schaefer et al., 2018; Tiggemann & Lynch, 2001; Tiggemann & Slater, 2002, 2015), with theoretical accounts having frequently pointed out that the link between self-objectification and appearance anxiety is facilitated by the internalisation of cultural ideals on appearance and beauty (Lindner & Tantleff-Dunn, 2017; Moradi et al., 2005). This may help to explain why, in studies 3 and 4, women with a higher level of trait self-objectification tended to modify their photos more: the beauty ideal is particularly internalised among high self-objectified women (who also score higher on dissatisfaction with their appearance); thus, they likely have a stronger urge to adjust an image before presenting themselves to others.

The desire to adjust one's image may help to mitigate the appearance anxiety or body dissatisfaction that plagues high self-objectifiers. The result we found in Study 3 & 4 can be seen as important empirical evidence for self-objectified women's consistent internalization of sociocultural beauty ideals. The normative standard of the filters we provided in Study 3 & 4 are temporary descriptive norms, which may not have been powerful enough to activate participants' approval motivation. However, filters of the beautification applications are all created based on commonly accepted societal beauty standards (more prescriptive compared to our manipulations), the more the filter is applied usually means the more tendency to meet the standards. Therefore, regardless of what women participants are told in individual

instances regarding the optimal level, an ingrained internalisation of beauty ideals in high self-objectifiers can hardly be changed by these temporary norms. Alternatively, despite the indicated optimal level, participants might believe that more modification towards the photo makes the photo look better in terms of photo quality, professionality, or otherwise. We did not get to investigate the underlying mechanism, and future studies could test the tentative roles of, for example, self-dissatisfaction.

Moreover, appearance modifications may help to reduce the awareness of one's physical self. Indeed, research indicates that self-threats, such as mortality salience (Wisman et al., 2015), boredom (Moynihan et al., 2021), and disbelief in free-will (Moynihan et al., 2018), may trigger attempts to escape from the self (Wisman, 2006). Perhaps participants' desire for modification reflects a similar attempt to disassociate from the self. Future research should examine how these two motivations might interact.

Implications. In Study 1, we examined both social approval motivation and social desirability in responding. Paulhus (1984) proposed a two-way model of socially desirable responding: self-deception and impression management. Self-deception refers to an unconscious twist of self-image with a desire to perceive oneself as someone better than the original self. Impression management, on the other hand, is mainly to present other people with an image that demonstrates some socially welcoming traits, such as reliable, friendly, and generous. Both components of the model are relevant to the intention of presenting a better self and, in turn, gaining favourable responses from others. This intention orients people with approval motivation toward activities that can gain acceptance for them (Veroff, 1978). Our findings are consistent with Paulhus' two-component model by demonstrating that, for women in the present studies, high approval motivation delivers a positive self-presentation intention, which fits the impression management part of the model specifically.

The present study also demonstrates how the positive link between self-objectification and approval motivation manifests in daily life practices. We chose social network sites—an arena in which objectification is likely to occur (Fardouly & Vartanian, 2016)—to test how increased approval motivation plays out in women's self-presentational behaviours.

We found that women with higher trait self-objectification tend to modify their profile photos to a greater extent (Study 2). Interestingly, women did not modify their photos towards a level that is deemed optimal but simply towards greater (or more extreme) alternation of their photos (Study 3 & 4). Although recent studies have already established a strong correlation between self-objectification and photo-editing behaviours on social media (Caso et al., 2020; Lamp et al., 2019; Veldhuis et al., 2018; Wang et al., 2019), these are the first studies to provide a more context-focused measure for modifying self-presentation besides using self-report scale measures.

Limitations and Future Directions

One limitation of the methodology is that while measuring participants' effort on self-presentation (i.e., the extent they edit their profile pictures), we asked participants to imagine editing their own photos using the filters we provided them instead of asking participants' to actually edit a photo. Furthermore, the current research only tested one type of self-presentation, namely social network site profile pictures. Future research can examine whether the effect of trait self-objectification on self-presentation applies across contexts. For instance, does self-objectification on self-presentation only manifest in appearance-based behaviours or are other self-presentation behaviours also present? Further, the present study only tested trait self-objectification, and future studies can test whether experimentally elicited state self-objectification also leads to an increased approval motivation and self-presentation behaviours.

As all four studies were conducted via Prolific without pre-screening for ethnicity, our participants were predominantly (more than 80%) White women. The sample of this research lacked ethnic variation. We do not know if the association found in this research is specific to Caucasian women or can be generalized to a larger population.

Finally, the present study adopted a cross-sectional design and did not explore a causal relation between self-objectification and approval motivation. Studies conducted by de Vries & Peter (2013) suggested that experimentally manipulated sexual objectifying stimuli is also related to online self-portrayal. Future research should test if experimentally elicited state self-objectification also leads to increased approval motivation and the self-presentation behaviours.

Conclusions

Self-objectification among women comes with lower satisfaction of their appearance. On social media, an arena which is suffused with unrealistic body image ideals and extensive body comparisons, the dissatisfaction with one's body and the drive for others' approval may be especially salient for self-objectified women. Our research shows some preliminary evidence that the approval-seeking tendency intertwines with an urge for high self-objectified women to strategically modify their self-presentation (i.e., to retouch their profile photo to a greater extent).

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Appendix

Table 1

Regression Model Predicting Filter Level Chosen in Study 4

Predictors	*B*	*SE*	β	95% of confidence interval for B	
				Lower Bound	Upper Bound
Intercept	3.44**	.13		3.19	3.68
Self-Objectification	.32*	.15	.15	0.03	0.61
Level Condition	.41**	.12	.22	0.16	0.65
Filter Condition	.40**	.12	.22	0.15	0.64
Level*Filter	-.05	.12	-.03	-0.29	0.20
SO*Filter Condition	-.13	.15	-.06	-0.42	0.16
SO*Level Condition	.04	.15	.02	-0.25	0.33
SO*Filter *Level	.03	.15	.01	-0.26	0.32

Note. $*p < .05$. $**p < .01$

Figure 1

Filter Matrix in Study 2&3 Demonstrating the Graduation of Filter Effect from Very Mild (Original) to Very Obvious Modification (Level 7)

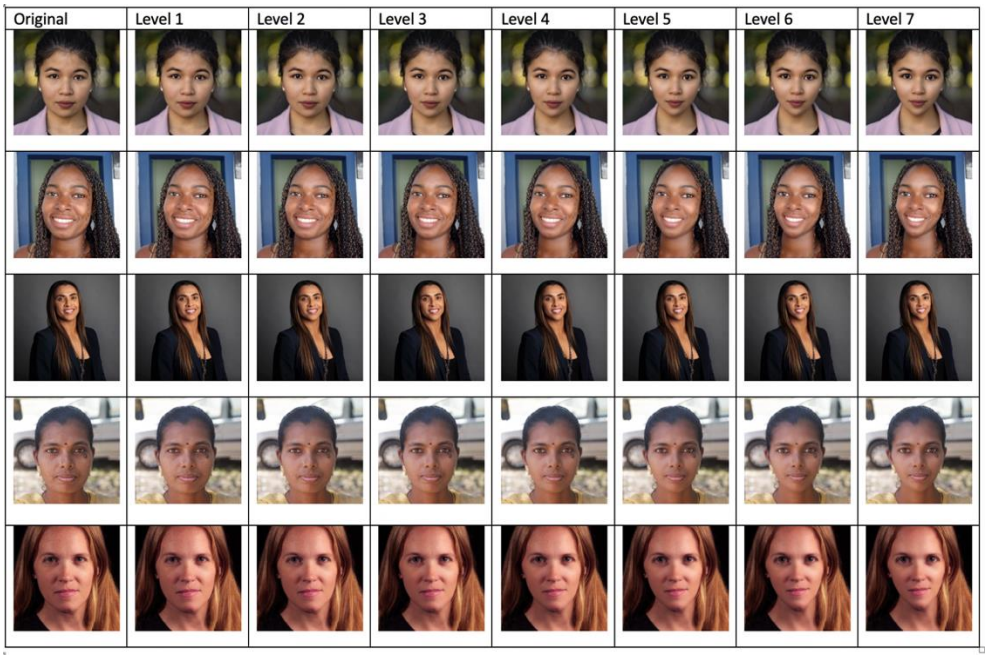

Figure 2

Level of Modification Chosen by Conditions and Trait Self-objectification in Study 3

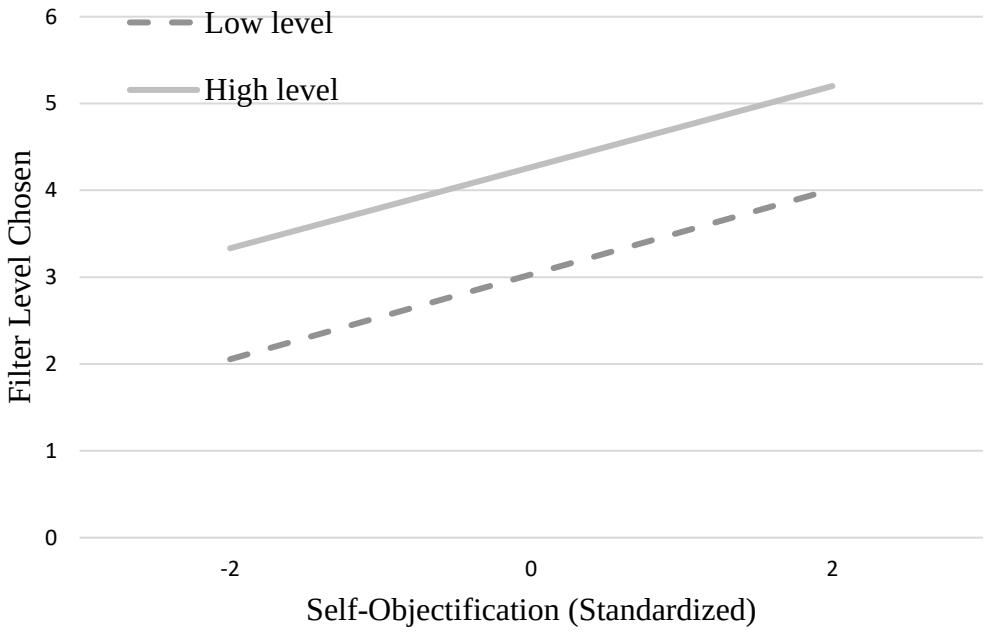

Figure 3

Filter Matrix in Study 4 Demonstrating the Background Blurry Effect from Mild (Original) to Strong Modification (Level 7)

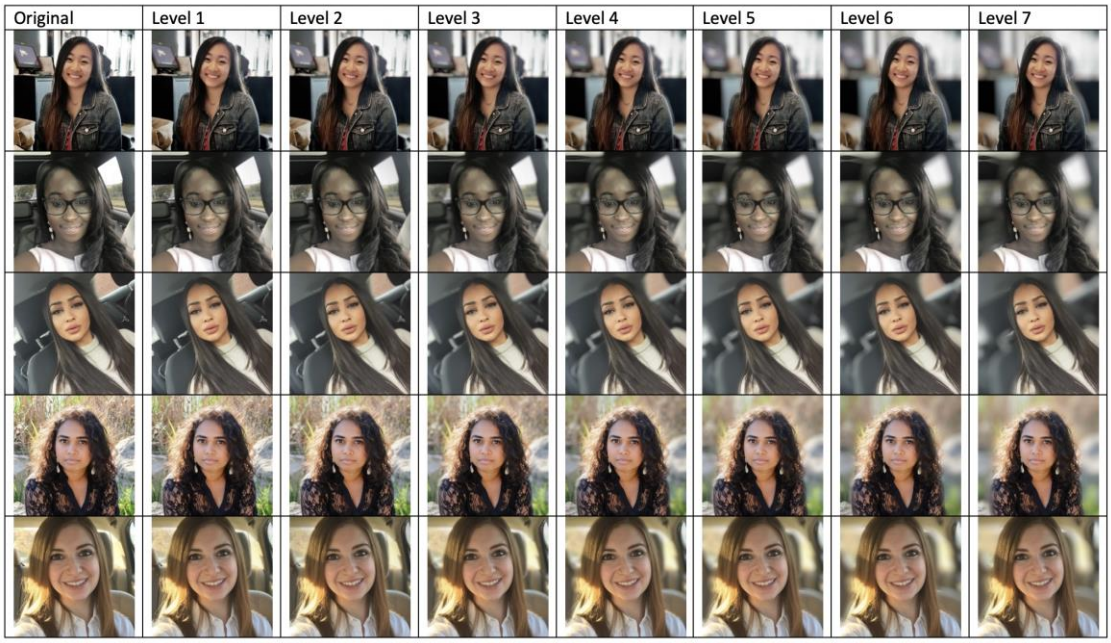

Figure 4

Level of Modification Chosen by Conditions and Trait Self-objectification in Study 4