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Putting Your Best Face Forward: The Accuracy of Online Dating Photographs

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This study examines the accuracy of 54 online dating photographs posted by heterosexual daters. We report data on (a1) online daters' self-reported accuracy, (b) independent judges' perceptions of accuracy, and (c) inconsistencies in the profile photograph identified by trained coders. While online daters rated their photos as relatively accurate, independent judges rated approximately 1/3 of the photographs as not accurate. Female photographs were judged as less accurate than male photographs, and were more likely to be older, to be retouched or taken by a professional photographer, and to contain inconsistencies, including changes in hair style and skin quality. The findings are discussed in terms of the tensions experienced by online daters to (a) enhance their physical attractiveness and (b) present a photograph that would not be judged deceptive in subsequent face-to-face meetings. The paper extends the theoretical concept of selective self-presentation to online photographs, and discusses issues of self-deception and social desirability bias.

Presenting ourselves to the world is a fundamental and complex process (Goffman, 1959), one that has been further complicated by communication technologies that allow us to self-present online. One of the central concerns with online forms of self-presentation is their fidelity: How close do online self-presentations match real-world identities? This concern is reflected in recent surveys of people's beliefs about deception online. For instance, in one study of chat room users, three-quarters of respondents reported believing that deception online is widespread (Caspie & Gorsky, 2006).

More so than in other online venues, deception in online dating profiles is a critical concern for many users. Online dating services allow subscribers to build profiles describing themselves and to contact or be contacted directly by other users in view of developing romantic relationships. As daters invest time, money and hopes into this process, they perceive encountering deception in potential mates' profiles as a major risk. In a survey of online dating users, over 80% of participants

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registered concerns that others misrepresent themselves (Gibbs, Ellison, & Heino, 2006), and, in another large-scale survey, deception was identified as the biggest perceived disadvantage of online dating (Brym & Lenton, 2001).

Although there are numerous examples of egregious online deceptions about identity reported in the media (e.g., Labi, 2007), several empirical studies suggest that, at least in contexts where face-to-face interaction is expected, such as online dating, deception tends to be subtle rather than extreme, and self-enhancing rather than overtly malicious (Ellison, Heino, & Gibbs, 2006; Hitsch, Hortacsu, & Ariely, 2004; Toma, Hancock & Ellison, 2008). For instance, male daters typically add a couple of inches to their height, whereas female daters subtract a few pounds from their weight in order to appear more attractive to the opposite sex (Toma et al., 2008).

With the emergence of profile-based social networking sites, including online dating sites and other social networking sites like MySpace and Facebook, online self-presentations are no longer limited to text-based descriptions. The profile photograph is now a central component of online self-presentation, and one that is critical for relational success. For instance, both men and women are more likely to look at a dating profile that contains a photo than at one that does not, and members whose profiles contain photographs are contacted approximately seven times more often than members whose profiles do not contain photos (see Humphreys, 2004). Despite their new ubiquity and importance online, photographs have received relatively little scholarly attention in the context of self-presentation.

Given the importance of profile photographs in online dating and the widespread concerns regarding deception online, the present study examines the accuracy of photographs posted by heterosexual daters in their online dating profiles. We define profile photographs as images in an online dating profile used to represent one's physical appearance, and we operationalize accuracy as the degree to which profile photographs resemble daters' current appearance. The primary research questions addressed in the present study are: (a) how accurate are photographs in online dating profiles? (b) in what ways do profile photographs differ from how daters look on an everyday basis? and (c) how does accuracy in profile photographs differ for men and women? In answering these questions we attempt to extend a theoretical model of text-based computer-mediated communication to include photographic elements.

Self-presentation and accuracy in online dating photographs
Self-presentation is defined as the process of packaging and editing the self in order to create a certain impression upon the audience (Goffman, 1959). Online daters make self-presentational choices regarding what information to disclose, how to disclose it, and whether or not to engage in deception, such that the profile attracts desirable potential mates (Ellison, Heino, & Gibbs, 2006; Schlenker, 2002; Toma et al., 2008). These self-presentational choices are typically guided by two underlying tensions: (a) self-enhancement, or daters' desire to appear as attractive as possible in order to be noticed by potential mates; and (b) authenticity, or the need to appear honest in their description of themselves.

Previous studies (Toma et al., 2008) have examined the interplay of these tensions in the questionnaire elements of the online dating profile (e.g., items related to height, weight, income, drinking, etc.) and found that online daters balance their conflicting desires for self-enhancement and authenticity by engaging in deception frequently, but with lies that are sufficiently subtle to go unnoticed in face-to-face meetings with potential mates. This type of strategic packaging of the self in computer-mediated environments is facilitated by the medium's ability to support *selective self-presentation,* a carefully controlled and orchestrated type of self-presentation (Walther, 1992, p. 229). As originally outlined by Walther, selective self-presentation is made possible by (a) the textual nature of computer-mediated communication (CMC), which makes messages more editable, and (b) the slowed temporal dynamics of CMC, which gives users more time to construct their self-presentation. Although self-presentation is inherently a selective process, these two features of CMC allow users to exercise much more control over their self-presentation than they would in face-to-face environments, and hence their online self-presentation is "selective" above and beyond what it would normally be face-to-face (Walther 1992; 1996).

Selective self-presentation has not yet been considered in the context of nontextual aspects of CMC, such as photographs. Given that photographs can be edited and their staging and selection carefully controlled, we argue that although selective self-presentation was originally conceptualized as arising from the textual nature of early online communication, the concept can be extended to the profile photograph. Indeed, we expect daters to be able to engage in selective self-presentation through the profile photographs, and we expect them to be motivated to do so by the same underlying tensions of authenticity versus self-enhancement.

An important difficulty that arises from applying the concept of selective self-presentation to profile photographs, however, lies in the problematic nature of operationalizing the accuracy of a photograph. Unlike text-based statements, such as "I am 6 feet tall" that can be easily and objectively verified, judgments about veracity in photographs are not straightforward. In the following sections, we first briefly review the literature on veracity and photographs, and then develop a framework for understanding photographic accuracy that can be applicable not only to online dating profiles but to online self-presentations in general.

Truth and deception in photography

Scholars of photography have described two opposing views concerning the issue of whether photographs can be accurate. At one extreme end of the debate is the view that photographs represent truth and reality. Film theorist André Bazin argues that "the photographic image is the object itself" (cited in Walton, 1984, p. 246), meaning that photographs are an identical representation of the object photographed, provided that there are no subsequent alterations. In this view, photographs have a documentary nature, and stand as evidence that the event or person in front of the lens did in fact exist and looked the way they appeared in the photograph (Denton, 2005). At the other end of the spectrum are those who argue that, if

truth in photography is defined as a depiction of what we would have seen had we been there ourselves, then all photography is necessarily deceptive (James, 2005; Mercedes, 1996; Snyder & Allen, 1975). Because our vision does not operate the way a camera does, a photograph can never show us reality the way we would have seen it ourselves. A photograph is captured at a certain moment in time, from a certain angle, using a technology whose nature influences the quality of the photograph, and with potential for subsequent editing (Mercedes, 1996; Snyder & Allen, 1975). In this view, photography is by its very nature deceptive.

In the specific context of the profile photograph, we argue that a position between these two extremes is reasonable. While we agree that photographs cannot act as a perfect representation of a dater, we believe that profile photographs are expected to provide a faithful *approximation* of the physical. The ability to provide a realistic likeness of a person or object under conditions where objective truth is impossible to achieve has been referred to as ''verisimilitude'' (Yodelis Smith, 1989). In the present study, we define accuracy in profile photographs as a measure of verisimilitude, in which accurate photographs provide a realistic likeness of online daters at the time they participated in the study, while inaccurate photographs represent unrealistic or deceptive representations of their current likeness.

An important issue to consider is from whose viewpoint to examine photographic accuracy: the self-presenters' or observers'? It is, after all, possible for self-presenters to consider their photographs accurate, while observers consider them deceptive, and vice versa. Because profile photographs have the purpose of illustrating how somebody looks *to observers*, we are primarily interested in the observers' opinion. While we consider both self-presenters' and observers' perspectives, in the present study we define photographic accuracy as ''realistic likeness,'' or the degree to which an observer would consider the photograph to provide a good enough approximation of the person in it.

Authenticity in online dating photographs

As noted above, there are important reasons to expect that online daters will strive for verisimilitude in their profile photographs. The raison d'être of creating online dating profiles and paying for online dating services is to facilitate face-to-face encounters and eventually build offline relationships. This anticipation of face-to-face interaction (Walther, 1996) should constrain the use of deception as a self-presentational resource because lying in one's online dating profile is socially unacceptable and, if uncovered, may alienate potential mates. In previous work, lying about photographs was considered the least socially acceptable by daters, along with lying about relationship status (Toma et al., 2008). It is also noteworthy that discrepancies regarding physical appearance are most likely the first aspect potential mates notice when meeting face-to-face, and that this increased salience of deception may make it particularly unappealing as a self-presentational choice.

While the anticipation of face-to-face interaction should constrain the use of deception in any portion of the online dating profile, it is particularly problematic

for photographs because of their *iconic* nature (Messaris, 1997). Iconicity is the property of photographs to replicate closely the real objects and people they are depicting. Unlike painting and drawing (and in spite of the endless possibilities for manipulation), photography is generally perceived to be an unmediated copy of the real world, and society has a strong bias towards attributing it a documentary value (Mercedes, 1996; Sturken & Cartwright, 2004; Snyder and Allen, 1975). This inflated truth bias may lead online daters to expect potential mates to look exactly as they do in their profile pictures, and to be disappointed if they do not. To the extent that daters are aware of this societal bias, we expect them to strive to portray themselves accurately in their profile photographs.

Self-enhancement in online dating photographs

There are also reasons to expect daters to take advantage of the affordances for manipulation presented by the photographic medium to enhance their self-presentation. Most notably, there is a premium on physical attractiveness in our society, and particularly in the dating arena, that may lead daters to engage in manipulations in order to increase their perceived level of attractiveness. The advantages of being beautiful extend to many aspects of life, as attractive people have been shown to have better jobs, higher incomes, more friends, and better social skills (see Riggio, Widaman, Tucker, & Salinas, 1991; Thornhill & Grammer, 1999); conversely, the penalty for physical unattractiveness can be a major social disadvantage and source of discrimination (Adamson & Doud Galli, 2003). In the dating world, attractive people are considered more desirable dating partners (Gangestad & Scheyd, 2005; Riggio et al., 1991), and in one study, physical attractiveness was the only feature that predicted whether daters wanted to see potential partners again (Thornhill & Grammer, 1999). In light of the benefits associated with physical beauty in this context, we expect online daters to engage in photographic deception for the purpose of getting noticed in the competitive online dating arena.

To summarize, we expect photographs to be authentic because of (a) anticipated face-to-face interaction, where deception regarding physical characteristics can be readily spotted and alienate potential mates; and (b) the iconic nature of photographs, which may inflate viewers' expectations of the accuracy of the photograph. Conversely, we expect photographs to be self-enhancing because (a) physical attractiveness is at a premium in the online dating arena, and (b) photography is an editable medium that affords opportunities for selective self-presentation. Our primary research question, therefore, is how online daters will resolve the tension between authenticity and self-enhancement in their online dating profile photographs. We expected deceptions to be relatively frequent but subtle:

> **H1:** Deception in online dating photographs should be frequently observed and self-enhancing.

Discrepancies in Online Dating Photographs

The next question of interest is concerned with the types of discrepancies that are likely to be present in online dating photographs. Specifically, in what ways

will daters' appearance in profile photographs differ from their appearance on an everyday basis? Although there are many possible incongruities between photographs and reality (for a review, see Messaris, 1997), there are at least two general categories of self-presentational discrepancies in a profile photograph that can affect its accuracy. The first are discrepancies concerned with the *physical characteristics* of the person portrayed in the photograph. These can include makeup, professional hair styling and wigs, and flattering clothes and poses. The age of the photograph can also influence its accuracy. Profile photographs are presented as current representations of the self, when in fact they may have been taken many months earlier and may portray an earlier version of the self. For example, a balding man wishing to depict himself as having more hair than he currently does may choose an old photograph, taken when he was younger and did in fact have more hair. Although this photograph may have been accurate at the time it was taken, it no longer provides an accurate depiction of his current appearance.

The second type of discrepancy that may affect the perceived accuracy of a profile photograph is concerned with the *photographic process*. During the photo shoot, parameters such as camera resolution, light exposure, and zooming can affect the nature of the photo. For instance, a camera with low resolution may hide skin imperfections, and the use of a flash may distort hair, eye, and skin color. Furthermore, professional photographers can, and regularly do, use a variety of techniques to enhance the physical attractiveness of a subject. After the photo shoot, software can be used to enhance the photograph. While such procedures were reserved for the professionals not long ago, design software (e.g., Adobe Photoshop) has become widely available and user friendly in recent years (Casimiro, 2005). Depending on the user's knowledge, these software packages can be used for removing wrinkles, sun damage, and other skin imperfections, making hair shinier and fuller, whitening teeth, enlarging eyes, and so forth (Messaris, 1997).

While there are a number of ways that a photograph can be inconsistent with a dater's current appearance, it is not clear which of these discrepancies will lead viewers to judge a photograph as deceptive. Given the subjectivity of photography and the difficulty of achieving photographic truth discussed earlier, it is possible that some of these inconsistencies will be considered inconsequential (for instance, having slightly lighter hair), whereas others may be judged as extremely deceptive (for instance, being visibly younger in the profile photo). Our second question is concerned with not only what aspects of profile photographs tend to differ from current everyday photographs of online daters, but also which of these discrepancies lead viewers to judge the profile photograph as inaccurate.

H2: Judges will evaluate photographic discrepancies as deceptive in some cases but not others.

Gender Differences in Deceptive Practices

The final question of interest in this study is whether men and women display different patterns of accuracy and inconsistencies between profile photographs and

how they look on a daily basis. Copious research in human mating habits suggests that, while both men and women look for mates with characteristics that will enhance reproductive success, these characteristics differ for the two genders (Ahuvia & Adelman, 1992; Hirschman, 1987; Hitsch, Hortacsu, & Ariely, 2004; Jagger, 2001; Lynn & Bolig, 1985; Nevid, 1984; Woll & Cozby, 1987). Specifically, men seek youth and physical attractiveness, whereas women look for ability to provide and indicators of social status. Although research indicates that physical attractiveness is of critical importance in the dating arena in general, the finding that men value physical attractiveness more than women is particularly robust (see Buss, 1988). We therefore hypothesize that:

H3a: Women's photographs will be judged as less accurate than men's photographs.

H3b: Women's photographs will contain more discrepancies than men's.

Because profile photographs are, by definition, depictions of one's physical attractiveness, we expect them to play a particularly important role in women's self-presentation. But which components of women's self-presentation create impressions of attractiveness? Research shows that men prefer youthful and slender women who have lustrous hair, large eyes, full lips, small noses, and clear and smooth skin (see Scheib, Gangestad & Thornhill, 1999). Because deception occurs in the direction of the opposite gender's preferences (Tooke & Camire, 1991), we expect women's photographs to contain self-enhancing representations of these elements. We also expect women to post photographs representing younger versions of themselves.

H4a: Women will post photographs that contain more discrepancies related to hair, skin, and facial appearance than men's photographs.

H4b: Women will post older photographs that present earlier versions of themselves than men.

The present study

In the present study, online daters were invited to participate in a study of self-presentation in online dating profiles. Participants were asked to rate the accuracy of their profile photographs on a scale from completely inaccurate to completely accurate, after which they were photographed in order to capture their current appearance. Independent judges then compared the profile photograph to the current photograph of the participants. Finally, trained raters coded the profile photographs for discrepancies with the current photograph of the participant. We used these three measures to provide converging evidence regarding accuracy in online dating profile photographs.

Methods

Participants and Recruitment

Participants were 54 heterosexual online daters (27 men and 27 women) who subscribed to either Yahoo Personals, Match.com, American Singles, or Webdate. These services were selected because they are mainstream online dating portals

that allow users to self-present through standard profiles. Each profile consists of a photograph upload tool and a series of multiple-choice and open-ended questions assessing daters' height, weight, age, ethnicity, religion, political views, relationship status, etc. Services that rely on matching systems to pair users (e.g., eHarmony) were excluded from this study.

The online dating services included in this study applied only minimal restrictions on the kinds of photographs users could post, such as prohibiting the posting of photographs containing children, or objects and animals in lieu of the dater (e.g., a photograph of a sneaker or of a cat as someone's profile photograph). Other than that, the services allowed users control over which photographs to post.

Participants were recruited through print and online advertising in the New York City area. The advertisements called for participation in a study of self-presentation in online dating profiles, without mentioning deception. Four hundred and seventy-nine online daters signed up for participation through the study's website. At sign-up they provided information about the online service they used, their username, and e-mail address. Usernames served to locate online dating profiles and identify participants across the demographics of gender, age, and sexual orientation. Online daters were invited to participate in the study if we could confirm that they had a profile in one of the four services listed above, if their profile contained a photograph, and if they were heterosexual. Homosexual participants were excluded from the sample in order to eliminate the potential confounding effect of sexual orientation. We also attempted to match participants' age as closely as possible to the age demographics of a national sample of online daters (Fiore, 2004).

Procedure

Overview. Participants were invited to meet with a researcher in the Psychology lab at the New School University. Once at the lab, participants were presented with a printout of their online dating profiles and asked to rate the accuracy of each profile element on a scale from 1 to 5 (1 = completely inaccurate, 5 = completely accurate). Second, participants were photographed in the lab in order to obtain a current representation of their physical appearance. Participants were asked to pose as they did in their main profile photograph. Third, participants were interviewed about the accuracy of their online dating profiles, including the kinds of manipulations they had performed on their photographs. The interview data was used to help construct the coding scheme described below for identifying inconsistencies in the profile photograph. At the conclusion of the study, participants were debriefed and paid $30.

Accuracy of the main profile photograph

The accuracy of the main profile photograph was assessed via two methods: (a) participants' self-report and (b) ratings by independent judges. First, participants reported the accuracy of their own profile picture, on a scale from 1 (*completely inaccurate*) to 5 (*completely accurate*). Participants were instructed to compare

their photograph with how they look currently. This measure is referred to as the *self-reported accuracy of the photograph.*

Next, a group of independent judges ($N = 50$, 20 males, and 30 female) rated the accuracy of the daters' main profile photograph by comparing it with the photograph taken by the researcher in the lab. Judges were college students at a large university in the northeastern United States (18–22 years old) and were not acquainted with any of the participants. Judges were seated in a projection room and shown two side-by-side images of each dater: the main profile photograph and the lab photograph. Judges were instructed to disregard clothing, makeup, and props, and rate the extent to which the profile photograph constitutes an accurate depiction of the daters' current physical appearance. Judges used a scale from 1 (completely inaccurate) to 5 (completely accurate). This measure is referred to as the *independently judged accuracy of the photograph.*

Age of the main profile photograph

Participants reported how long ago their main profile photograph was taken (in months). This measure assessed the extent to which participants displayed younger versions of themselves in their profile photographs.

Discrepancies in photographs

Lastly, a group of four trained coders analyzed the discrepancies between daters' profile photographs and lab photographs. A list of 13 possible incongruities were identified both inductively from online daters' written reports and interviews about the kinds of manipulations they had performed on their photographs and deductively from a review of the literature on deception in the dating realm. These discrepancies refer to (a) aspects of the daters' physical appearance in the photograph (weight, age, skin, hair style, hair length, eyes, eyebrows, nose, teeth), and (b) aspects of the photographic process (cropping, retouching, black-and-white photographs, and professional photographs). Coders were shown each dater's profile and lab photograph side by side. They then noted whether each discrepancy was present or absent in the profile photograph. We disregarded discrepancies that occurred fewer than 5 times, which narrowed the initial list of 13 to 9 (see Table 1). Acceptable intercoder reliability was achieved for each of these categories (see Table 1).

Results

Self-reported and independent judgments of accuracy

Recall that online daters rated the accuracy of their own main profile photograph on a scale from 1 to 5, with 1 being completely inaccurate and 5 being completely accurate. Overall, participants tended to judge their photos as accurate ($M = 4.46$, $SD = 0.86$). Males ($M = 4.33$, $SD = 1.21$) and females ($M = 4.43$, $SD = 0.58$) did not differ in their assessment of their own accuracy, $t (48) = -0.01$, ns.

Independent judges rated the accuracy of daters' main profile photograph by comparing it with a current photograph taken at the time of the study. The

Table 1 Coding Scheme for Identifying Discrepancies in Profile Photographs and Inter-Rater Reliability Scores

Category	Definition	Kappa
1. Weight	Is the person thinner or heavier in the profile photo than in the current photo?	0.58
2. Age	Does the person look younger or older in the profile photo than in the current photo?	0.67
3. Skin	Is there a difference in the appearance of the skin (smoothness, wrinkles, acne)?	0.82
4. Hair style	Is there a difference in the color and texture of the hair?	0.65
5. Hair length	Is there a difference in the length of the hair (or presence of baldness for men)?	0.72
6. Teeth	Is there a difference in the shape, color (whiteness), or number of teeth?	0.79
7. Professional picture	Does the profile photo appear like it's been taken by a professional photographer (notice style, pose, lighting, background, props)?	0.81
8. Cropping	Does the profile photo appear cropped (e.g., notice deviations from the standard size of 4 × 6 or 5 × 7, or whether someone appears to be cut out of the photo)?	0.62
9. Retouching	Does the profile photo appear to have been airbrushed?	0.64

accuracy of the photographs was examined with a mixed-model general linear model that included judge gender as the within-subjects factor and dater gender as the between-subjects factor. Male photographs ($M = 3.50$, $SD = 0.50$) were rated as significantly more accurate than female photographs ($M = 2.98$, $SD = 0.74$), $F(1, 52) = 9.61$, $p = 0.003$. Importantly, there was no main effect of judge gender $F(1, 52) = 1.46$, $p = 0.23$, indicating that overall accuracy ratings given by male judges ($M = 3.26$, $SD = 0.69$) were not different from accuracy ratings given by female judges ($M = 3.22$, $SD = 0.69$).

To summarize, these data suggest that male photographs tended to be rated as more accurate than female photographs, and that judge gender did not play an overall role in the ratings.

Relationship between self-report accuracy scores and judges' accuracy scores
An important set of questions is concerned with how the self-reported accuracy scores compare with the independent judges' scores. First, as expected, the participants tended to rate their photographs ($M = 4.46$, $SD = 0.86$) as more accurate than independent judges rated them ($M = 3.35$, $SD = 0.53$), $F(1, 48) = 76.66$, $p < 0.001$. Second, although participants saw their photo as more accurate than the independent judges did, were the self-report and judges' ratings correlated? The participant and independent judgments of accuracy were correlated for male photographs only ($r = 0.33$, $p = 0.05$, 1-tailed); the correlation was not significant for females ($r = 0.11$, ns).

Taken together, these data reveal that independent judges rated both male and female photographs as less accurate than the daters did. However, independent judges' perceptions of accuracy tracked the self-reported accuracy for male daters only, suggesting that when independent judges considered a male photograph inaccurate, so too did the male daters. For female photographs, there was no relationship between independent judgments and self-reported judgments, suggesting that female daters did not view their photograph as inaccurate when independent judges did.

Discrepancies in photographs

Overview. Trained raters coded whether there were any discrepancies between the daters' main profile photograph and the photograph taken at the time of the study. Recall that these discrepancies pertained to (a) the physical characteristics of the daters (weight, teeth, age, hair length, hair style, skin), or (b) aspects of the photographic process (retouching, cropping, professional photograph).

Overall, female photographs contained more discrepancies than male photographs, $t(52) = 3.58$, $p = 0.001$. Photographs of female daters contained an average of 3.00 discrepancies ($SD = 2.09$; $min = 0$, $max = 9$), while photographs of male daters contained an average of 1.33 discrepancies ($SD = 1.21$; $min = 0$, $max = 4$). Table 2 describes the frequency of each discrepancy type observed in the photographs across gender. As expected, chi-square analyses revealed that female photographs had more inconsistencies related to physical characteristics—including age, hair style, and skin—than male photographs. Female photographs also contained more discrepancies concerned with photographic processes, including retouching and professionally taken photographs (see Table 2).

Finally, according to the participants' self-report, the profile photographs were, on average, 21 months old. Because the distribution of the age of the photographs was positively skewed, nonparametric statistics were used to compare across genders. Female photographs were significantly older (*median* = 17 months, $min = 1$,

Table 2 Frequency of Discrepancy Type Observed in Female and Male Photographs

	Women		Men		
	Total	%	Total	%	Chi-square
Physical characteristics					
Weight	11	40.74	6	22.22	2.15
Teeth	5	23.81	4	14.81	0.13
Hair length	3	11.11	7	25.93	1.96
Hair style	10	37.04	1	3.70	9.25**
Skin	13	48.15	7	25.93	2.86±
Age	15	55.56	6	22.22	6.31**
Photographic processes					
Retouching	7	25.93	0	0.00	8.04**
Professional picture	8	29.63	1	3.70	6.53**
Cropping	7	25.93	4	14.81	1.03

Note: ± < .1, **< .01

$max = 240$) than male photographs ($median = 6$ months, $min = 1$, $max = 60$), $U = 211.0$, $p = 0.03$, suggesting that females tended to post photographs that depicted them as younger than they were to a greater degree than males.

Discrepancies and perceptions of accuracy

Did the incongruities identified by our coding scheme relate to perceptions of deception? To examine this question, we first analyzed the relationship between observed discrepancies and self-report accuracy scores. For males, the number of discrepancies identified by the coders correlated with self-reported accuracy ($r = -0.41$, $p = 0.04$), suggesting that male daters judged their photographs as less accurate as more discrepancies were identified by our coding scheme. This was not the case for females. Females' judgments of their photographs was not related to the total number of discrepancies observed ($r = 0.22$, ns), suggesting that female daters' perceptions of accuracy was not related to the discrepancies identified by our coding scheme.

The next analysis examined the relationship between the discrepancies identified by our coding scheme and the independent judges' ratings of accuracy. In this analysis, the total number of discrepancies in each photograph was significantly correlated to accuracy scores for both male ($r = -0.48$, $p = 0.01$) and female photographs ($r = -0.75$, $p < 0.001$). Thus, while for males the total number of discrepancies present in the photograph was correlated *both* with self-report and independently assessed accuracy assessments, for females the total number of discrepancies was only correlated with independently assessed accuracy. This result suggests that the total number of discrepancies led the judges to rate female photographs as less accurate, but had no impact on the females' self-report accuracy scores.

Given that the total number of discrepancies correlated with independent perceptions of accuracy in the photographs, which of the specific discrepancies led judges to consider the photographs deceptive? The correlations between independently judged accuracy scores and each of the discrepancy types are described in Table 3. Judges' accuracy scores of female photographs were significantly correlated with the physical characteristic discrepancies of weight, hair length, hair style, teeth, and with the photographic process discrepancy of retouching and professional photographer. Judges' scores of male daters' photographs were significantly correlated only with the physical characteristic discrepancies of hair length/baldness and age.

Discussion

The accuracy of online dating photographs

Our first question of interest was concerned with the accuracy of online daters' profile photographs given the competing influences of authenticity, or online daters' desire to be perceived as honest by potential mates, and self-enhancement, or their desire to appear as attractive as possible. The results from the self-report data, in which participants indicated the accuracy of their photograph, suggested that their profile photos were very accurate, with a median score of 5 on the 5-point scale ($M = 4.46$).

Table 3 Correlations Between Number of Discrepancies and Independently Judged Photograph Accuracy

	Independently Judged Accuracy	
Discrepancy Type	Male	Female
Physical characteristics		
Weight	−.33*	−.38*
Teeth	.22	−.42*
Skin	−.20	−.29
Hair length	−.40*	−.54**
Hair style	−.06	−.57**
Age	−.39*	−.36±
Photographic processes		
Retouching	n/a	−.48*
Professional picture	−.13	−.28
Cropping	−.15	−.01

Note: $\pm p < .1$, $^{*}p < .05$, $^{**}p < .01$

Independent judges, however, viewed the photographs as substantially less accurate. On average, independent judges rated the photographs just above the midpoint of the accuracy scale ($M = 3.24$), a level of accuracy that is significantly below the *'completely accurate'* anchor of the scale ($p < 0.05$), revealing inaccuracies of a relatively large magnitude. In addition, nearly one-third of the profile photographs (31.5%) were rated below the midpoint of the scale, suggesting that independent viewers frequently considered the photographs to be inaccurate representations of the current appearance of the participant.

Recall that several factors were expected to increase the accuracy of photographs, whereas others were expected to promote deceptiveness. On the one hand, photographic accuracy was expected to be high because of (a) anticipated face-to-face interaction (Walther, 1996), where photographic deception can be easily detected and alienate potential mates; and (b) the iconic nature of photographs, which leads viewers to assume that photographs resemble exactly the object or person they are depicting (Messaris, 1997).

On the other hand, photographic accuracy was expected to be low because (a) the photo is a representation of the daters' physical attractiveness, a characteristic that is critically important in the dating arena to attract potential mates (Gangestad & Scheyd, 2005; Riggio et al., 1991); (b) photography is a highly subjective medium (Snyder & Allen, 1975); and (c) photography is an elastic medium that is easy to manipulate.

The data suggest that, consistent with our first hypothesis, the tension between authenticity and self-enhancement was resolved by tilting the balance in favor of self-enhancement. By engaging in substantial amounts of selective self-presentation, daters enhanced their physical characteristics relative to how they look on an everyday basis. This is especially the case when compared to levels of deception in other elements of the profile, such as height and weight. As noted above, Toma

et al. (2008) observed that while deceptions in the questionnaire part of the profile tended to be frequent, they also tended to be small in magnitude (e.g., 5% of actual height or weight). In the present case, not only were the photographs frequently considered inaccurate by independent judges, but the inaccuracies were relatively large in magnitude.

What counts as deception in online dating photographs?

The second question of interest was concerned with the elements of a profile photograph that may be inconsistent with the daters' current physical presentation, and whether these discrepancies can account for perceptions of accuracy or inaccuracy. Recall that we distinguished between two kinds of inconsistencies: (a) discrepancies about physical characteristics, such as age, weight, hair color, and (b) discrepancies generated by the photographic processes, such as retouching, cropping, or hiring professional photographers. The results revealed that the majority of photographs contained at least one of these discrepancies (46 of the 54 photographs), and that female photographs contained three times the number of discrepancies of male photographs.

Importantly, the inconsistencies identified in the photographs by our coding scheme correlated with the independent judgments of accuracy. The more discrepancies a photograph contained, the less accurate the photograph was judged. These data support the view that the discrepancies in the coding scheme were indeed important to perceptions of accuracy in a photograph.

As predicted in our second hypothesis, not all discrepancies were considered equal in their deceptiveness. The discrepancies that reduced judgments of accuracy the most across genders were those related to weight, hair length, and age. In addition, inconsistencies related to hair style and retouching reduced accuracy in female photographs. Thus, these data suggest that what generally counts as deception in online dating profile photographs are discrepancies related to weight, hair, age, and, for women in particular, the retouching of photographs.

Gender differences

A large body of research suggests that youthfulness and physical attractiveness may be more important characteristics of women's than of men's, because they serve as indicators of underlying qualities of fertility and genetic fitness. Because photographs are, par excellence, representations of both physical attractiveness and youthfulness, we expected these evolutionary forces to be reflected in the degree of deception in women's photographs.

Our first gender-related hypothesis (*H3a*) stated that women's photographs would be less accurate than men's because women face greater pressure to enhance their physical attractiveness. This hypothesis was supported. While men and women did not differ in their self-reported accuracy judgments, independent judges rated women's photographs as significantly less accurate than men's. Almost half (48.1%) of female photographs were rated below the midpoint of the accuracy scale, while

only 14.8% of male photographs were rated below the midpoint. Our second and related hypothesis (*H3b*) was that women's profile photographs would have more discrepancies than men's. This was supported, with women's photographs containing, on average, three times as many discrepancies as men's.

The next hypothesis (*H4a*) was concerned with the nature of the discrepancies and predicted that women's photographs would contain discrepancies related to men's preferences. This hypothesis was also supported. Female photographs contained more physical discrepancies related to age, hair style, and skin, and more photographic process discrepancies involving retouching and professional photography. These observations fall in line with claims that youthfulness and fertility are signaled by clear skin and lustrous hair for females, and that men attend to these cues when considering potential partners (Scheib, Gangestad & Thornhill, 1999). The tendency of women (but not of men) to hire professional photographers to take their profile photographs further highlights the importance of physical attractiveness for women in the dating arena, and their willingness to portray their physical appearance in the best possible light.

Lastly, we hypothesized (*H4b*) that women would present younger versions of themselves by posting older photographs than men's. This was supported as well, with women's photographs being taken an average of 17 months earlier, and men's photographs taken only an average of 6 months earlier. This observation is again consistent with the expectation from evolutionary psychology that females enhance their youthfulness to match the sexual preferences of males.

Overall, the data provide support for the evolutionary psychology claims that youthfulness and physical attractiveness are more important for women than men, and that female daters use the profile photograph as a tool to showcase their physical attractiveness.

Social desirability and social awareness in self-presentation

As noted above, independent judges rated the photographs as less accurate than the participants. This effect is consistent with the social desirability bias (Paulhus, 2002), which refers to participants' tendency to provide responses that create a favorable impression. This is particularly problematic in studies of deception, where participants are asked to report the truth about their own deceptions, but might not do so for fear of being negatively judged by the experimenter. Social desirability bias appears to be a reasonable explanation for the responses by males for at least two reasons: (a) male participants' self-reported accuracy scores, albeit higher, were significantly correlated to judges' scores; and (b) male participants self-rated their photographs as less accurate when more discrepancies were present. Together, these correlations suggest that males were aware of the inaccuracies in their photographs, but that they simply assigned them less weight in making accuracy judgments.

In contrast, the self-report accuracy scores of female participants did not correlate with either the independent judges' assessments or with the number of discrepancies identified in the photograph. This decoupling of the self-report and independent

observer ratings suggest that women's inflated self-report accuracy scores are not entirely due to social desirability bias. One possible explanation is that women engaged in self-deception and that they were oblivious to the discrepancies present in the photograph (Ellison et al., 2005). Although it is difficult to be oblivious to some discrepancies, such as age or whether or not the photograph was taken by a professional photographer, other discrepancies, like having clearer skin or looking thinner because of the photographic angle, may not occur intentionally and, therefore, may not have been considered inaccurate by the female daters. This self-deception could occur because physical attractiveness is more important for women than for men (see Lance, 1998; Woll & Cozby, 1987). Consequently, women may believe that flattering photographs are actually accurate in order to preserve self-esteem and self-worth (Brewer, Archer & Manning, 2007).

A second possible explanation is that females believed that the profile photograph is an accurate portrayal of what they would look like on a first date. That is, female participants may have believed that their current physical self, as represented in the photograph taken as part of the study, could change to look like their portrayal in the profile photograph. This is certainly possible given the social norm for women to engage in certain well-known beauty rituals, including makeup, hair styling, and clothing choices. If this was the case, then female participants would have judged their profile photograph as accurate not because of self-deception or lack of self-awareness, but because of their belief that they could change their current physical representation to match the photograph.

If female daters were relying on changes in their appearance when making judgments of their accuracy, then female judges may have been more forgiving of discrepancies in female photographs. However, female judges did not rate female photographs more leniently than the male judges [$t(26) = -0.85, p = 0.41$], suggesting that the female judges did not take this social norm into consideration. Future research is needed to establish with more certainty the extent to which the self-enhancement that occurred in daters' photographs, especially female photographs, occurred consciously or not.

Selective self-presentation in the photographic medium
One of the contributions of this study was to extend the notion of *selective self-presentation*, originally developed to refer to the textual elements of online self-presentations, to profile photographs. In laying out the Hyperpersonal model, Walther (1996) originally noted that selective self-presentation is possible in computer-mediated communication because of the properties of text (e.g., editability) and the fact that there are no visual aspects to text-based computer-mediated communication. The present study, however, reveals that selective self-presentation can and does also occur in visual components of online self-presentation. Perhaps more so than text, photographs are highly editable, rehearsible (daters may switch between photographs in order to boost their online dating success), and amenable to careful selection and control.

We have argued that two motivations shaped the selective self-presentation process of the profile photographs: (a) the desire to self-enhance, and (b) the need to come across as authentic. This type of situation, in which a presenter does not want to lie but also does not want to be entirely truthful, often leads to what Bavelas and colleagues (Bavelas, Black, Chovil, & Mullett, 1990) call *equivocal communication*, which refers to communication that is nonstraightforward, vague, and ambiguous. The selective self-presentation that our online daters engaged in could be considered a visual or photographic form of equivocation. Consider, for example, the female daters who may post photographs that are not accurate, in the sense that women do not normally look as good as they portray themselves, but are not entirely deceptive either, because women *could* look as good as their photographs on special occasions and with special preparations. If this were the case, then the posting of photographs may represent a form of visual equivocation meant to resolve the tension between authenticity and self-enhancement.

Finally, as noted in the introduction, one difficulty in applying the selective self-presentation concept to photographs is gauging the extent to which a photograph *can* be accurate. We resolved this issue by introducing the notion of verisimilitude, or realistic likeness, and using it as the measure for photographic accuracy. Given the elusiveness of verisimilitude, we also attempted to establish what kind of discrepancies from verisimilitude lead to inaccuracy in the specific context of online dating profiles, and found that incongruities of weight, hair length, age, and retouching led independent judges to rate profile photographs as less accurate. Future research is invited to examine selective self-presentation in photographs posted on other kinds of online profiles (e.g., Facebook, MySpace, etc.), and to examine what kinds of departures from a realistic likeness leads to perceptions of inaccuracy in these new contexts.

Limitations

The present study had a number of important limitations. The first was that the focus was explicitly limited to the physical representation of the dater in the photograph. Profile photographs can include other information relevant to self-presentation, including props and settings that can highlight aspects of the self (Leary, 1996). For example, a photograph displaying the dater on a tropical beach might convey the impression of a person who loves travel to sunny locales. The present study did not consider aspects of the photograph beyond the physical. A second limitation is the method used to assess accuracy. The comparison photograph for determining accuracy was a photograph taken when the daters took part in the study. While this was a current representation of the daters' appearance in everyday life, online daters might expect their initial dates to involve more managed self-presentation, including more makeup or finer clothing. As noted above, this belief may have been especially true of the female daters.

Contributions and conclusions

Despite these limitations, the present study advances our understanding of the accuracy of online dating photographs, and also makes several important theoretical

contributions. First, we expand a central component of the Hyperpersonal model of CMC, selective self-presentation, to include photographic elements. As noted, this concept was limited to text and the qualities that allowed for self-enhancement in text-based communication. We have extended this concept to the visual domain, and shown that the same kinds of affordances described by Walther (1996) for textual communication also allow for enhanced self-presentation in online photographs. Second, we establish what counts as accuracy and deception in dating photographs, and we introduce the concept of verisimilitude, or the expectation of a realistic likeness, for assessing photographic accuracy in this context. To the best of our knowledge, this is the first attempt to define and operationalize deception in online dating photographs. Finally, we provide additional support for evolutionary psychology theories predicting gender differences in self-presentation.

Our results reveal that, compared to text-based aspects of online profiles, which involve frequent but relatively subtle deceptions (see Toma et al., 2008), profile photographs were frequently judged inaccurate as participants balanced the tensions of self-enhancement and authenticity. These observations provide some support for the concerns registered by online daters regarding deception in online dating profiles, and suggest that the fidelity between online self-presentations and the real world can be less faithful than we might hope. Indeed, these data suggest that the online profile photograph is an excellent vehicle for putting one's best face forward.

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