The Truth about Lying in Online Dating Profiles

Jeffrey T. Hancock
Dept of Communication &
Faculty of Information Science
Cornell University
jeff.hancock@cornell.edu

Catalina Toma
Department of Communication
Cornell University
clt32@cornell.edu

Nicole Ellison
Dept of Telecommunications,
Information Studies, and Media
Michigan State University
nellison@msu.edu

ABSTRACT

Online dating is a popular new tool for initiating romantic relationships, although recent research and media reports suggest that it may also be fertile ground for deception. Unlike previous studies that rely solely on self-report data, the present study establishes ground truth for 80 online daters' height, weight and age, and compares ground truth data to the information provided in online dating profiles. The results suggest that deception is indeed frequently observed, but that the magnitude of the deceptions is usually small. As expected, deceptions differ by gender. Results are discussed in light of the Hyperpersonal model and the self-presentational tensions experienced by online dating participants.

Author Keywords

Online dating, deception, self-presentation, computer-mediated communication.

ACM Classification Keywords

H5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.
J4 Social and behavioral systems: Psychology

INTRODUCTION

Establishing close relationships, particularly romantic ones, is a basic human drive, with important implications for life satisfaction and general well-being. People have traditionally invested a great deal of effort in "engineering" romantic encounters, including matchmaking, placing personal advertisements in newspapers and, more recently, engaging in online dating. Online dating, in which individuals create profiles and initiate contact with others through an online service, is now one of the most frequently used services on the Internet, and one of its largest revenue generators [1].

CHI 2007, April 28–May 3, 2007, San Jose, California, USA.

Despite its success with users, popular press and anecdotal accounts claim online dating is rife with deception. This belief is documented by recent survey research reporting that 86% of online dating participants felt others misrepresented their physical appearance [see 1], and by the introduction of websites dedicated specifically to unveiling online dating deception (e.g., *truedater.com*, which allows users to post comments on the veracity of online daters' profiles). To date, however, research on the actual practice of deception in online dating profiles has been sparse, and relied solely on users' self-reports.

The objective of the present paper is to assess deception in this context by comparing online daters' profile information with their actual, observed characteristics. We establish ground truth by measuring three verifiable characteristics that are particularly salient in the online dating environment: height, weight and age. This cross-validation between profile and observed characteristics constitutes the first attempt to assess *actual* levels of deception in online dating profiles. Our specific research goals are to assess: 1) the frequency of deception in online dating profiles, 2) the magnitude of the lies, and 3) gender differences in the production of deception.

In examining deception in online dating profiles we consider the fundamental tensions that guide online daters' self-presentational behaviors, namely the ability to fabricate an attractive online persona and the constraints of meeting dates in person, where the veracity of online presentations can be appraised [1].

Self-Presentation and Online Deception

Erving Goffman [3] suggested that the packaging and editing of the self in order to make favorable impressions upon others is an essential and ubiquitous component of social interaction. This process of self-presentation, however, is intrinsically intertwined with deception. Broadly defined as the intentional misrepresentation of information, deception can take a variety of forms, from outright lying to exaggeration. Because individuals should be particularly conscious of the impressions they create when constructing profiles to be scrutinized by potential mates, deception may be an important resource for creating an attractive self-presentation.

Understanding patterns of deception in online dating profiles is contingent upon examining both technological and social factors, such as the design of the online dating service, users' relational goals, and their demographic characteristics. Walther's [6] Hyperpersonal model is a useful framework for exploring how users take advantage of Computer-Mediated Communication's (CMC) deceptive potential while considering the constraints of their relational goals. The model postulates that the distinct features of online communication offer users the opportunity to engage in *selective self-presentation*—a more mindful and strategic version of face-to-face self-presentation. More specifically, *asynchronicity* ensures the relaxation of time constraints between profile creation and actual interaction with potential dates, such that users have more time to carefully formulate their self-presentation. *Editability* allows users to go back and adjust their self-presentation, which puts them at a distinct advantage compared to face-to-face daters. Together, these features allow online daters to plan, create and edit their self-presentation, including deceptive elements, much more deliberately than they would in face-to-face first encounters.

There are, however, social and technical aspects of CMC that may *discourage* deception. *Recordability*, or the ability to save and archive a profile, may detract users from leaving evidence of their deception [4]. *Anticipation of future interaction*, or users' expectation of meeting other daters in person, where certain deceptions can be immediately spotted (e.g., height, weight, body type), is another deterrent against deception. The structural features of online dating services may also impact deception production as well. For instance, online dating emphasizes those aspects of the self that are highly personal but also quantifiable, such as users' height, weight, and age, and deception may be used to avoid discomfort or to circumvent the sites' search filters [1].

Gender Differences

Patterns of deception in online dating profiles may also be affected by gender differences. Extensive research in sociobiology and evolutionary psychology suggests that men and women use different strategies for enhancing their reproductive fitness, according to the requirements of their biological makeup. In general, men look for youth and physical attractiveness in their partners, whereas women look for ability to provide and indicators of social status, such as education and career [5].

Individuals should engage in deception to meet the expectations of attractive prospects. In online dating profiles, women should lie more about characteristics related to youth and physical attractiveness. Specifically, we expect women to understate their age and weight more than men. Men should lie about characteristics that indicate social status. In the context of our variables of interest, men should enhance their height, a characteristic often associated with power and status, more than women.

METHODS

Online Dating Services

The study examined four popular online dating sites in the United States: Match.com/MSN Match.com, Yahoo Personals, American Singles and Webdate. We focused on traditional sites, where individuals create profiles and initiate contact with others, as opposed to sites that pair users based on survey responses (e.g., eHarmony).

Participants and recruitment

Data collection took place in New York City. Participants were recruited through print and online advertisements in the *Village Voice*, the area's most prominent weekly newspaper, and on Craigslist.org, a popular classifieds portal. The advertisements described a study of self-presentation in online dating and did not mention deception. Four hundred and seventy-nine online daters signed up for participation through the study's website, of which 251 were invited to participate in the study. Participants were invited to participate according to their dating profile information to create a sample that matched the age demographics of a national sample of online daters [2]. Only heterosexuals were selected to participate, and gender was held equal in order to conduct gender comparisons.

The final sample included 80 participants (40 men and 40 women), of whom 45 (53.3%) were Match.com/MSN Match.com users, 29 (34.5%) were Yahoo Personals users, four were (4.8%) Webdate users, and two (2.4%) were American Singles users. Relative to Fiore and Donath's [2] national sample, young men and women (ages 21-30) were overrepresented, whereas older men and women (ages 51-65) were underrepresented.

Procedure

We first collected participants' self-reported assessment of their profile's accuracy with respect to height, weight and age. Participants were presented with a printed copy of their online dating profile and asked to rate the accuracy of their responses. Accuracy was defined as "the extent to which the answer reflects the truth about you now," and was operationalized on a scale from 1 to 5, with 5 being most accurate, and 1 least accurate. If participants had selected "I'll tell you later" or "No Answer" for a specific question, they were asked to report what they would have answered had the question been mandatory (i.e., "the profile doesn't make it mandatory for you to specify your weight, but if it did, what would you say?"), and then rate the accuracy of that answer.

	Overall	Males	Females
Height	48.1%	55.3%	41.5%
Weight	59.7%	60.5%	59.0%
Age	18.7%	24.3%	13.2%

Table 1. Percent of Participants Providing Deceptive Information for Height, Weight and Age.

After collecting information about the accuracy of participants' profiles, we measured their height (in inches) and weight (in pounds) and recorded their age from their drivers' licenses. All participants were asked to remove their shoes and outerwear in order to obtain accurate height and weight measurements. Upon completion of the study, participants were debriefed and paid $30 for their time.

RESULTS

Frequency of deception in dating profiles

We assessed deception frequency by comparing profile information to measured characteristics. We first classified participants as either lying or not in the categories of height, weight and age. For height, discrepancies greater than half an inch were considered deceptive; for weight, deviations greater than five pounds; for age, any deviation from their present age.

As shown in Table 1, a higher percentage of participants lied about their weight than either height or age $\chi^2(2, N = 71) = 25.22$, $p < .001$. In fact, almost two thirds of the participants' weight was inaccurate by 5 pounds or more. Age was the least lied about characteristic, while almost half of the participants lied about their height. Surprisingly, no gender effects were observed in the frequency data.

Magnitude of deception in dating profiles

The average deviation from the height reported in the profile and measured in the lab was .33 inches, ranging from 3 inches taller and 1.75 inches shorter than participants reported in their profile. The relationship between the height information presented in the dating profile and participants' observed height is presented in the top panel of Figure 1. Points falling below the line indicate participants who claimed they were taller than they actually are. Points falling above the line indicate the opposite. A regression model including gender, profile height (centered), the gender x profile height interaction term, and a quadratic term for profile height, accounted for a significant, but not complete amount of variance in observed height ($R^2 = .96$). This indicates that the profile information did not perfectly predict observed height and that some inaccuracy was present in the online profiles. As predicted, profile height tended to overstate actual height more for men ($M = .57$ inches; $SD = .81$ inches) than for women ($M = .03$; $SD = .75$) [$t(74) = 3.08$, $p < .01$]. For both men and women, short participants tended to overestimate their height more than tall participants [$B = .02$, $t(77) = 1.80$, $p < .05$ (1-tailed)].

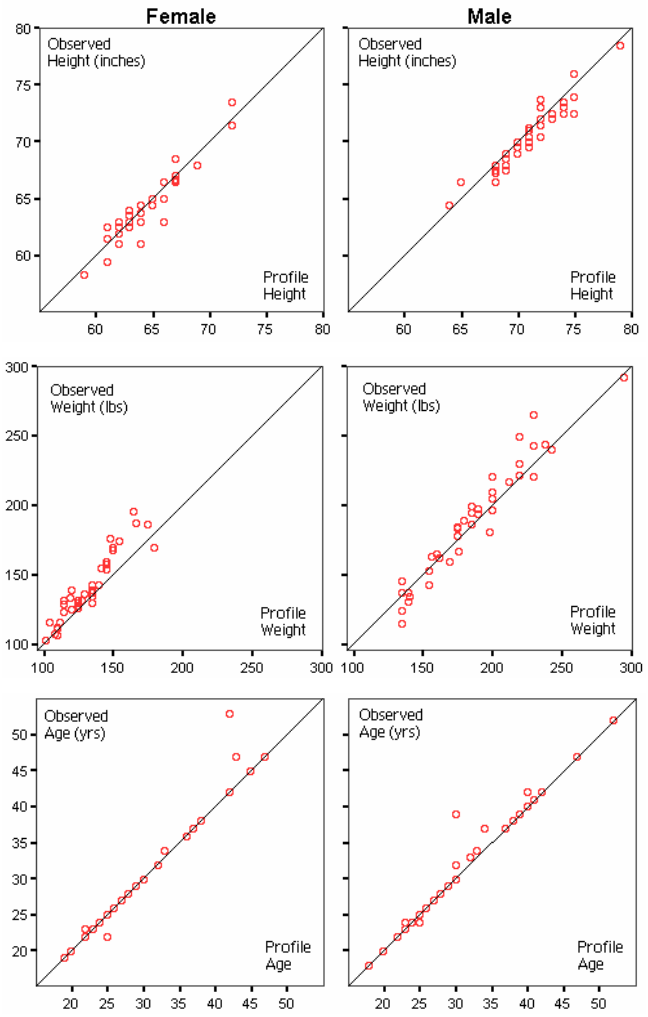

Figure 1. Profile by Observed Characteristics for Height, Weight and Age across Gender.

The average deviation between observed and profile weight was 5.68 lbs, and ranged from 35 pounds heavier and 20.4 pounds lighter than participants reported in their profile. The same regression model applied to the weight variables accounted for a significant but incomplete amount of the variance ($R^2 = .95$). As can be seen in the middle panel of Figure 1, women tended to under-report their weight ($M = 8.48$ lbs; $SD = 8.87$ lbs) significantly more than men ($M = 1.94$; $SD = 10.34$) [$t(74) = 2.97$, $p < .05$]. For both men and women, heavy participants tended to underestimate their weight more than light ones [$B = -.02$, $t(77) = 2.39$, $p < .05$].

The average deviation between observed and profile age was .44 yrs, and ranged from three years younger to nine years older than participants reported in their profile. The same model applied to the age variables also accounted for a significant but incomplete amount of the variance ($R^2 = .96$). As can be seen in the bottom panel of Figure 1, participants' reported age tended to match their actual age, and no difference in age deception was observed between

males (M = -.51 yrs; SD = 1.61 yrs) and females (M =.-37; SD = 1.96) [$t(73) < 1$]. Although Figure 1 suggests that older participants were more likely to lie about their age, this trend was not significant [B = -.002, $t(77) < 1$].

Deception or Self-Deception?

In order to rule out the possibility that these inaccuracies were cases of self-deception (i.e., truly believing you weigh less than you actually do), we examined the degree to which participants were aware of the discrepancies in their profile. Participants self-reported estimations of their accuracy for height (r = -.22, $p < .05$), weight (r = -.30, $p < .01$), and age (r = -.73, $p < .001$), were all significantly correlated to the deviations between profile and measured characteristics (negatively correlated because lower accuracy scores correlated with bigger discrepancies). These results suggest that the participants were aware of the inaccuracies in their profiles, and that the discrepancies were unlikely to be self-deceptions and were most likely intentional.

DISCUSSION

By cross-validating profile information with observed personal characteristics, this research constitutes the first attempt to gauge actual practices of deception in the context of online dating. This cross-validation method avoids some of the important downsides of self-report data related to deception (e.g., relying on people to be honest about their lies).

The results reveal that the widespread concern regarding the pervasiveness of deception in online dating is only partly justified. Deception was indeed frequently observed: approximately nine out of ten (81%) of the participants lied on at least one of the assessed variables. Weight was the most frequently lied about attribute, followed by height, and least of all age. The magnitude of the deceptions, however, was usually small, with average deviations between profile and observed characteristics of only 1.1% of a user's observed height, 5.6% of weight, and 1.5% of age. Many of these deceptions would be difficult to detect face-to-face.

Although the large majority of observed deceptions were slight, there were nevertheless a few extreme lies in the sample, including a three inch lie about height, a 35 pound lie about weight, and an 11 year lie about age. These rare but extreme lies would be highly salient and memorable when encountered. This may be one reason that people believe lying is so rampant in online dating, especially since these extreme lies are more likely to be circulated.

Consistent with expectations that males and females should lie to enhance what potential mates will find attractive [5], men systematically overestimated their height while women consistently underestimated their weight. Surprisingly, age-related deception was minimal and did not differ by gender. This result may reflect the fact that age is a stable characteristic that cannot be altered. In contrast, both weight and height can fluctuate (by losing/gaining weight, or wearing heels) and potentially be adjusted. It is also possible, however, that the over-representation of younger participants in the sample limited our power to detect age-related deception, which may be more frequently practiced by older participants, as indicated by the trends in our data.

Indeed, an important limitation of the study was the relatively small and self-selected sample, which constrains the generalizability of the results. A second limitation was that only three variables among the dozens that make up an online profile were examined. Future analyses should apply similar cross-validation techniques to a wider range of profile elements (e.g., income, occupation, education) to flesh out our understanding of deception in online dating.

Despite these limitations, the results provide support for the Hyperpersonal model [6] and the process of selective self-presentation. The pattern of the deceptions, frequent but slight, suggest that deception in online dating profiles is *strategic.* Participants balanced the tension between appearing as attractive as possible while also being perceived as honest. Online daters appear to intentionally take advantage of the profile features that afford the enhancement of their self-presentation (e.g., editablity, asynchronicity), while bearing in mind the socio-technical constraints of online dating profiles (e.g., recordability and anticipated face-to-face interaction).

ACKNOWLEDGMENTS

The authors are grateful to Michael Schober for making his lab at the New School available to us, Joe Walther for his feedback,, and Jeff Nevins for providing us with valuable tech support and assistance during data collection.

REFERENCES

[1] Ellison, N., Heino, R., & Gibbs, J. (2006). Managing impressions online: Self-presentation processes in the online dating environment. *Journal of Computer-Mediated Communication, 11*, article 2. http://jcmc.indiana.edu/vol11/issue2/ellison.html

[2] Fiore, A. T., & Donath, J. (2004). Online Personals: An Overview. *Proc, CHI* (2004), 1395-1398.

[3] Goffman, E. (1959). *The Presentation of Self in Everyday Life*. New York: Anchor.

[4] Hancock, J., Thom-Santelli, J., & Ritchie, T. (2004). Deception and design: The impact of communication technology on lying behavior. *Proc, CHI* (2004), 129-134.

[5] Lance, L. (1998). Gender differences in heterosexual dating: A content analysis of personal ads. *Journal of Men's Studies, 6,* 297-305.

[6] Walther, J. B. (1996). Computer-mediated communication: Impersonal, interpersonal, and hyperpersonal interaction. *Communication Research, 23*, 3-44.