

Impression Management Struggles in Online Dating

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ABSTRACT

Online dating systems are now widely used to search for romance and yet there is little research on how people use these systems to manage their impressions with potential romantic partners. To address this issue we conducted an interview study of 41 online dating users, revealing that—contrary to prior work—online daters largely do not want to intentionally deceive their online dating partners because they think such lies would quickly be discovered face-to-face. Nevertheless, bad first dates were a norm rather than an exception for this study’s participants. In this paper we present various frustrations online daters associate with conveying and forming impressions of potential romantic partners before meeting face-to-face. We discuss the implications of these findings for the design of online dating systems.

Categories and Subject Descriptors

H.5.3. Group and Organization Interfaces; Asynchronous interaction; Web-based interaction.

General Terms

Design, Economics, Human Factors

Keywords

Online dating, online introductions, impression management, impression formation, social matching, social computing

1. INTRODUCTION

In 2008 one out of thirty single Americans had used an online dating system [36]. By 2013 that number had risen to one in ten, making online dating a significant part of our social fabric. The number of commercially available online dating systems has significantly risen in recent years. In spite of this wide scale availability and adoption, user frustrations are still quite prevalent in online dating [9]. In this paper we explore the nature of online daters’ experiences in such systems in order to obtain a rich understanding of how their needs can be better supported.

User frustration with online dating is often spoken about in popular press as well as academic research [17, 44, 45]. Both men and women struggle to find a suitable romantic partner online, driving some to quit online dating entirely [44, 45]. Women are inundated with messages from men that they find unattractive at

best, and terrifying at worst [15]. The time users spend looking for and evaluating potential partners also significantly outweighs time they spend on face-to-face dates with users they meet online [17]. In spite of this general awareness of online dating issues, our knowledge of the processes involved in online dating interactions is limited. While it is not clear why users find the online dating process so frustrating, one popular belief held by users and researchers is that online daters intentionally deceive their potential partners in an attempt to appear more attractive [23]. Studies support the claim that a majority of online daters lie or exaggerate aspects of themselves through their profile pages [15, 18], but these studies focus solely on demographic qualities as listed on profile pages and seldom take into account personality traits that are also important to the evaluation of potential romantic partners [14, 17, 22, 32]. Challenges in identifying and interacting with a compatible dating partner online can be tied to impression management and formation. Impression management in online dating entails the ways users present themselves to fellow online daters, while impression formation involves the evaluation of fellow online daters to decide whether to continue communication and eventually meet face-to-face.

In this research we explore both impression management (self-presentation) and impression formation practices in online dating through profile pages and private messaging conversations. We begin by reviewing relevant background literature and then present an interview study with 41 online dating users about how they self-present and form impressions of other users through the entire online dating process—from browsing and crafting their own profile pages, to private messaging, to face-to-face meetings. We discuss our findings and their implications for the design of online dating systems.

2. BACKGROUND

Previous online dating research has primarily followed two paths — algorithm development to improve matching, and understanding user behavior with respect to impression management. Research concerning matching algorithms views online dating as a subset of recommender systems [6] and typically measures matching success based on a dataset of predetermined correct matches or users’ initial reactions to the profile pages they are matched with [1, 6, 34]. Such research has not evaluated the outcome of a match after an initial profile page view in terms of interaction between matched users, nor has it analyzed self-presentation practices. For the purposes of the research presented in this paper, we will focus our background review on impression management-related literature in online dating. We first begin with a short review of social matching and online dating systems. We continue with a review of research investigating romantic attraction, and how attractiveness is evaluated in online dating systems today. Then we discuss traditional impression management literature before delving into impression management within online dating. We end with a

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review of literature pertaining to misrepresentation—an issue frequently highlighted in existing research about impression management in online dating.

2.1 Social Matching and Online Dating Systems

In recent years a steady flow of web sites and mobile applications that facilitate online introductions between unknown individuals have emerged to satiate our need for new interpersonal attachments [3]. Online introductions are a key component of many social networking, social matching, and social discovery systems. For example, the social networking system *LinkedIn* uses its in-mail system to facilitate business introductions and networking. Online dating systems are a form of social matching system, or a type of system that aims to bring unknown parties together in both physical and online spaces [39]. Most online dating systems incorporate social matching algorithms that determine compatibility between users based on pre-determined sets of variables. The premise of matching in online dating systems is simple: match two users that are statistically likely to be romantically attracted to one another. Proprietary algorithms to unearth these romantic matches are often the main selling point for online dating systems. *OkCupid* and *Zoosk*, for instance, both promote their matching algorithms to differentiate themselves from competing online dating systems. Numerous non-dating social matching systems also exist. For example, *CoFoundersLab* connects budding entrepreneurs together to found a business, *Couch Surfing* helps match people with residences they can live in for free while on vacation, *Tennisopolis* helps people find tennis partners, and *Tastebuds.fm* and *Alikewise* find people with similar music or reading interests.

Online dating systems are “Internet services designed to facilitate interactions between potential romantic partners” [26]. Online dating now lays claim to one third of marriages in the United States [28] and major brands such as *match.com* and *eHarmony* boast millions of users. These major brands try to facilitate long-term relationships, but there are now a myriad of new online dating systems that hone on other user bases. *Grindr*, for example, caters to homosexual men, *JDate* to Jewish singles, and *How About We*, which matches users based on activities they want to do in the real world. There has also been explosive growth in mobile-only online dating systems such as *Tinder*, *Charm*, and *Blendr*, which use geo-location to match users. Online dating systems that began as browser-based systems now also have mobile app versions, such as *OkCupid* and *Plenty of Fish*.

2.2 Romantic Attraction and Online Dating

Research has produced a list of qualities and traits that determine physical attraction. For example, we are more attracted to people with symmetrical faces [31] and body odors that exert particular pheromones [21]. Men are more attracted to women that prominently wear the color red [10], and women are more attracted to men that are “prosocial,” altruistic, and dominant [7]. Humor has also been found to be a common predictor of desirability for women [5]. Some research even makes the argument that we are more attracted to a person when we have limited information about them, because additional information we gain may include qualities we deem to be unattractive [33].

Online dating systems try to explicate as many qualities about a potential mate as possible through information located on public profile pages. Research has shown that profile pictures are the biggest determinant of attraction [16, 24, 25, 39, 42], but other qualities exhibited in free-text components of the profile page are

also important. Specifically, females find male online daters attractive when their free-text components suggest the man is “genuine, trustworthy, extraverted, feminine, and not too warm and kind” [16]. Women were considered attractive when perceived as being feminine and possessing of high self-esteem through free-text components. Profiles pages that exhibited similarities to the profile viewer through factors such as height were also generally deemed more attractive [15, 27, 43].

2.3 Impression Management

“Virtually everyone is attentive to, if not explicitly concerned about how he or she is perceived and evaluated by other people” [30]. This concern is the basis of impression management, or the act of self-presentation. Goffman theorized impression management as a way to explain the “theatrical performances” that we undertake in our everyday social interactions in real life to shape the way people see us [20]. According to Goffman, people attempt to manage their impressions through their actions and words because they want people to perceive them a certain way.

Bozeman and Kacmar’s self-regulation model [4] depicts impression management as a process where each person (an “actor”) has a reference goal, which is the desired impression that the actor wants to convey during face-to-face interactions. Actors then use the feedback they receive from their communication partners during face-to-face interactions to evaluate how they are being perceived and if they are achieving their reference goal. If such feedback indicates that the actor is not being perceived as intended, the actor will alter his or her behavior in an attempt to better convey the intended impression in future interactions.

Several theories have also focused on impression formation, which entails the evaluation of communication partners during social interactions. Predicted Outcome Value Theory posits that a primary goal during initial interactions with strangers is to evaluate their value for future interactions [37]. If we predict a positive outcome value for a new acquaintance, it means we expect to extract value from future interactions with this person. If we predict a negative outcome value for this new person, we will end the relationship because we do not expect to gain additional value from it in the future.

Together, impression management theory and Predicted Outcome Value Theory suggest that our goal during social interactions with newly introduced people is two-fold. We want to 1) influence the way our communication partners perceive us (impression management), while we 2) evaluate our communication partners to determine their value for future interactions (impression formation).

2.4 Impression Management and Formation in Online Dating

Traditional impression management theory is based on face-to-face interactions. While the goal of online dating is typically to meet a fellow user face-to-face at some point [12, 22, 40], a bulk of interaction—and thus impression management—is done online before meeting in person. Online daters communicate with each other in public and private ways on these systems. Most online dating systems require every user to have a public profile page, which other users can view and use as a basis for instigating private communication. Private communication between two users is facilitated with messaging capabilities. For example, *Tinder*, a mobile online dating app, provides a private messaging interface similar to text messaging for two users to communicate once they have indicated mutual attraction. On top of messaging

capabilities, some online dating systems feature generic forms of private communication, such as sending “virtual gifts” to other users on the site (e.g. *PlentyofFish.com*), or “winking” at a user of interest (*match.com*).

While some online dating research indicates that users engage in private communication [8, 17], it seldom identifies and reports on the specific nature or content of such communication. A majority of online dating research has focused exclusively on public profile pages for impression management purposes [11, 15, 25, 39, 40, 42], with some of these studies being based on artificial profile pages or profiles built by participants purely for research purposes [2, 22]. Patterns have emerged between profile content and private messaging, such as that women often receive many more private messages than men [16]. But the impression management and formation processes that occur during private messaging are largely under researched.

There are two types of information that online daters can convey and interpret through public and private communication channels: searchable attributes and experiential attributes [17]. *Searchable attributes* are demographic qualities like height or ethnicity that are objective in nature and unambiguous. Several online dating systems such as *OkCupid* and *Ashley Madison* let users search for others based on searchable attributes, i.e. – “white men over 6 feet tall and younger than 30 years old.” Searchable attributes typically comprise a series of questions on public profile pages where users can choose fixed-choice answers about their height, ethnicity, sexual orientation, and other demographic qualities. Users also want to convey and interpret *experiential attributes*, which are personality traits that often need to be experienced in order to be conveyed, as the name implies. Experiential traits, like sense of humor, are integral when evaluating a potential online dating partner [14, 17, 22, 32], yet these traits are inherently subjective and tacit. This means they cannot be succinctly conveyed in fixed-choice profile questions. We consider “chemistry” and other vaguely defined qualities that daters often demand in their partners to be experiential attributes.

Most online dating research on impression management has focused only on searchable attributes and public profile pages. Existing research has seldom included experiential attributes in its scope despite being important to impression formation.

2.5 Misrepresentation in Online Dating

Social Information Processing Theory posits that online communications suffer from reduced social cues relative to face-to-face communication [41]. As a result, previous literature concludes that online daters frequently take advantage of stifled impression formation abilities to intentionally misrepresent themselves in an attempt to appear more attractive [23]. Studies have shown that a majority of online daters believe their fellow users lie, and studies comparing self-presentations online to attributes actually possessed support that belief [15, 18]. However, research around intentional misrepresentation has dealt almost exclusively with searchable attributes and their portrayals on public profile pages. We do not know if or how users adopt private communication methods to intentionally misrepresent themselves, or if and how they intentionally misrepresent experiential attributes. Furthermore, while online daters believe most of their fellow users deceive, they tend to consider themselves to be truthful [12, 42]. These users claim that intentional misrepresentation would not be conducive to their goals, which typically involve meeting other online daters in

person and having successful romantic relationships in the physical world.

If online daters consider themselves to be truthful, why has existing research largely concluded that they lie? Recent studies suggest that much of this intentional misrepresentation comes in the form of exaggerations about one’s qualities instead of blatant lies [11, 41]. These users attempt to convey a form of their “ideal future self,” characterized by qualities they expect to one day possess, but currently do not. An example would be an overweight user listing his body type as fit on his profile page because he goes to the gym several times a week and expects to be in better physical shape in the future.

Despite this explanation, existing research implies that users actually know how to self-present their intended impressions. In other words, it has been largely assumed that all misrepresentation in online dating is intentional. The possibility of unintentional misrepresentation—that a truthful user does not know how to clearly convey him or herself—has not been entertained, which could explain the disconnect between findings that most users misrepresent despite self-identifying as truthful.

Confusion between potentially unintentional and intentional misrepresentation becomes compounded when experiential attributes are introduced to the impression formation process. While a searchable attribute such as one’s height can be objectively validated, how does one validate sense of humor, or confidence? Subjectivity in one’s self-presentation and the possibility of unintentional misrepresentation have not been accounted for in existing research.

3. RESEARCH QUESTIONS

Our research questions revolved around understanding how online daters present themselves and evaluate other users within the system, with an emphasis on experiential attributes and private communication. We also explored if and how relationship goals influenced these two processes. Additionally, we aimed to investigate the severity of intentional misrepresentation (deception), particularly in terms of experiential attributes. Our broad research question was:

RQ1: How do users adopt public and private methods of communication in online dating systems to 1) present themselves and 2) form impressions of other users?

With respect to self-presentation we also asked:

RQ2: What are users’ relationship goals when joining the online dating system? Do these goals affect self-presentation?

RQ3: What feedback do users receive about their conveyed impressions?

RQ4: Do users intentionally misrepresent their experiential or searchable attributes? If so, what traits do they intentionally misrepresent and why?

With respect to impression management we also asked:

RQ5: Do relationship goals affect how users form impressions of others?

RQ6: How do impressions formed online compare to those formed once two users meet in person?

4. METHOD

A qualitative approach was used to investigate the above research questions. Specifically, we conducted semi-structured interviews

with 41 users of a popular online dating system and used an open coding scheme to derive themes and theoretical constructs [19].

4.1 The Online Dating System

We chose a popular, free online dating system in the United States as the context for our interview study. All users in the chosen system have a public profile page as well as four different methods of private communication available to them. These methods include private messaging (asynchronous like e-mail), “live chat” for instant/synchronous messaging, profile ratings (similar to a Facebook “poke”), and anonymous messaging between two randomly paired users to schedule a blind date.

4.2 Participants

Participants were found using the search feature available on the chosen online dating system. This search feature allows users to search for other users based on specific demographic criteria such as ethnicity, height, or location. We created a profile on the system in the lead researcher’s likeness—with our research intent clearly described in the profile—and sent a private message to users found through the search feature, inviting them to participate in an interview. Interview participants were searched for based on a combination of location (within 25 miles of the lead researcher’s university), gender, and ethnicity. Because the chosen system had eight different ethnicity choices that users could identify with, this yielded 16 different combinations of search criteria (2 genders x 8 ethnicities).

The top six profiles returned for each ethnicity/gender combination were messaged each week, inviting them to an interview. This led to 96 users being messaged each week—48 men and 48 women. We engaged in this interview invitation process for eight weeks, resulting in 864 total users being private messaged with an interview invitation. Of these users, 62 responded to the initial interview request and 41 of those resulted in an interview. Of the 21 that did not, 13 responded merely to decline the interview offer, 2 responded with overt sexual advances, and 6 failed to respond after a time and location for the interview were suggested.

Twenty-eight of the 41 interviews were conducted in-person at a location of the participant’s choosing, namely coffee shops (13), a bar (1), universities (12), and restaurants (2). The other 13 interviews were conducted online using Skype video chat because logistic and scheduling issues rendered an in-person interview impossible. Interview lengths ranged from 22 minutes to 72 minutes. Twenty of the participants were male, 21 were female, and ages ranged from 19 to 37. In terms of sexual orientation, 34 participants were straight, 5 were bisexual, and 2 were gay. Breakdown of ethnicities was as follows: 18 white, 9 black, 5 Hispanic, 3 Native American, 6 Asian, 8 Indian, 2 Middle Eastern, and 1 Pacific Islander. Six participants identified with multiple ethnicities.

4.3 Data Collection and Analysis

All interviews were voice recorded and summaries of each interview were written within 24 hours of the interview ending. A Grounded Theory approach was used for the qualitative analysis of interview data. Grounded Theory entails an iterative independent coding process to allow themes in the data to emerge naturally, and theory to emerge from these themes [19]. Our interview guide went through 3 iterations to reflect and hone in on emerging themes identified in completed interviews.

The first interview guide sought to grasp a broad understanding of participants’ communication habits, including what forms of

communication they favor. The second iteration placed a tighter focus on self-presentation and impression formation practices. The third and final iteration explored impression validation during face-to-face meetings in more detail and how relationship goals influenced self-presentation and impression formation practices. Interviews were initially coded using the themes discovered from our interview notes and debriefing discussions with the research team. Based on our coding scheme, a series of the most informative interviews were selected for full transcription and additional rounds of analysis and theory generation. The findings of this study are the end result of this iterative coding process. Representative quotes of the emergent themes are presented below. Participants’ names were changed for privacy.

5. FINDINGS

Several themes regarding communication preferences and frustrations with impression formation and management emerged early on in this study as we reported in a Research In Progress paper [44] prior to the completion of our interviews and the full transcription and analysis process. These findings were that:

1. Participants use both profile pages and private messaging to decide whether to meet other users face-to-face, making private messaging an essential step in self-presentation and impression formation.
2. The initiators of private conversation—usually men—try to emphasize positive affinities they have with their communication partner. However, they do not fabricate affinities to appear more attractive.
3. Users are not confident with the impressions they form online of other users before meeting in person and primary frustrations with online dating stem from inadequate feedback about conveyed impressions.

In this paper’s Findings section, we delve more deeply into relationship goals and their influence on communication behavior, as well as take a closer look into the dynamics of private messaging and how it contributes to self-presentation and impression formation. We also revisit the severity—or lack thereof—of intentional misrepresentation.

5.1 Self-Presentation

5.1.1 *Users exhibit tremendous anxiety and fear of rejection when trying to convey complex experiential traits.*

A majority of participants felt they were not being interpreted as intended by their communication partners on the system. Several of these participants believed misinterpretation could not be avoided online and is an expected side effect of the online dating process.

Larry, 32: “There’s a part of one’s personality that can’t be replicated online. You need the [in-person] dates to understand chemistry in a way that the Internet can’t do.”

Participants tended to describe their intended impression in terms of experiential attributes instead of searchable attributes. When asked to describe the general intended impression they wanted to convey to communication partners, participants often spoke of negative experiential qualities they try to avoid being associated with. Kenneth, a 33-year old single father who is looking for a committed relationship while juggling college courses and a full time job explained his intended impression:

Kenneth, 33: "Girls on the system tend to think everyone is a douchebag. I try to steer away from things that would give that impression [...] Most of the guys want to get a girl in bed. I'm not like that."

Dissatisfaction with communication methods available on the system for self-presentation was common. Participants felt hindered in their ability to convey complex experiential traits. Participants opted to present simpler versions of themselves in the open-ended sections of their profile pages because they discovered through face-to-face dates that their subtle experiential traits were often being misinterpreted online.

William, 35: "I find it so hard to accurately represent yourself. I feel that what I end up putting out there is a very extreme version of myself. I'm a far more complicated person than you can put out there in one little profile."

Jackie, 37: "I try to keep [my profile] honest as possible, but keep something open for the conversation."

Private messaging was considered an opportunity to convey complex experiential traits that were left out of profile pages, yet this was also the communication method that participants struggled with the most. Participants exhibited visible frustration when recounting how communication partners abruptly stop responding to a private messaging conversation. They were not necessarily bothered by the idea that a communication partner did not want to continue the conversation. Rather, frustration stemmed from not knowing why the conversation ended. Participants could not learn what behavior or information resulted in the conversation ending. They did not know if they were interpreted as intended and, if not, how they could correct their behavior to avoid future misinterpretation.

Jack, 28: "You think they would be such a great match [...] I took a good amount of time to write out this message, you couldn't take three seconds to say no?"

Amanda, 28: "[My private message conversations end abruptly] all the time. For a long time it was mostly the guy. Some guys like to blow me off, and it makes me so angry, ridiculously angry."

Feedback about conveyed impressions was most desired for the private messaging phase, as opposed to profile pages. Some participants even explicitly suggested it as a system improvement during interviews. Several also admitted that their primary motivation for agreeing to an interview was to solicit feedback from the lead researcher about their private messaging conversations.

Jason, 26: "What really sucks is that I don't get any feedback as to what is bad about my profile and messages. If you could look into putting in a freaking random suggestion box for the site that would be cool."

Evelyn, 30: "I get about three to five messages a day. Is that normal? What have the other girls said?"

Explicit feedback in the online dating system was scarce. Participants were not happy with system-provided feedback, which came in the form of a list of users that viewed their profile page, notifications when a user rated their profile highly, and timestamps that showed when a communication partner read their message. This feedback did not inform participants about their conveyed impressions, which led many to seek feedback through other informal ways. Straight men, in particular, described randomly changing their messaging habits to coax a response

from their communication partners. They would use reactions (or the absence of responses) to these random messages as feedback to inform their future messages with new communication partners. Others recounted messaging the same user multiple times in a row directly asking for feedback about how they were perceived.

Kenneth, 33: "Once in a blue moon, after a couple days, I'll go 'hey why didn't you respond to my message?' [...] That's something I want to know!"

Brian, 24: "I used canned lines from the Internet for a couple weeks, and then I started sending deeper messages. I ask a lot of questions in my messages now too."

Male participants frequently reported having a fear of rejection that developed from a lack of private message responses. For some of them, private message responses were so infrequent that they interpreted this to mean they were universally unattractive to the system's user base. This kept them from messaging the women they were most attracted to and led them to lower their participation levels on the system or leave the system entirely for extended periods of time.

Jack, 28: "Girls stop responding all the time. I'm kind of just un-phased by it now. I actually think that's incredibly depressing. [...] I never contact a girl first anymore. I wouldn't consider myself an active user anymore."

Jason, 26: "If the girl is supremely attractive, I won't message her. I'll only go for the average looking girls because my chance of a response is higher."

Arnold, 24: "I don't message more than three new girls a day because when they don't respond, it kind of hurts."

5.1.2 Users seldom want to intentionally deceive their communication partners because they believe such deception would not help their face-to-face relationships.

Participants tried to self-promote themselves to users they initiated private messaging with by emphasizing similarities they shared or qualities they believed the user would find attractive. This was true for both genders, regardless of sexual orientation. Perceived similarities were based on information found on the user's profile page, such as hobbies and careers mentioned in open-ended profile sections. Re-usable message content and response time behavior — such as waiting a minimum amount of time to respond in order to appear non-needy — were used by several participants in attempts to appear more attractive.

Malcolm, 24: "Seventy-two hours, that's my rule. I wait 72 hours before I respond to a message, always. I don't want to come off as needy."

Kenneth, 33: "There might be something in their profile about their favorite movies, so I'll quote those movies [in my private messages to them]."

Recipients of private messages liked it when their communication partner highlighted such affinities because it suggested the user took the time to read their profile page. This was particularly true when the affinities were based on information that was not explicitly stated in the participant's profile page. For example, Lara recounted a man she met face-to-face from the online dating system whose initial message referenced the college campus they both lived on. He had inferred this from information in her profile page.

Lara, 21: "A guy recently messaged me saying 'oh you must live on [her college campus]. I thought, 'oh cool, what gave me away?' He made the connection because I said I like trees and nature."

John, 25: "It's nice when they talk about programming with me or computer things. I'll spend a little more time on those messages because it's an interest we share."

Despite the desire to self-promote and maximize attractiveness, almost all participants considered themselves to be truthful in self-presentation on their profile page and through their private messages. This they said was due to their desire for successful relationships in the physical world where false presentation would quickly be discovered.

Jackie, 37: "I keep it 100% real. I don't want to portray myself as anything, I just want to be myself."

Only 2 participants reported intentionally misrepresenting an experiential attribute, and another 2 admitted to intentionally misrepresenting a searchable attribute. Barry joined the online dating system because he was insecure and wanted to work on his confidence, an experiential attribute. As such, he described how he acted more confident during his private messages than he really believed himself to be. The other example of intentional experiential misrepresentation was by Lauren, who used a fake profile picture during her first couple weeks on the system because of privacy concerns. She later changed it to a real picture of herself before meeting a man she was interested in from the system face-to-face.

Barry, 24: "I used to send long paragraphs, but now I send short messages where I try to make fun of the girls. Honestly, I have no idea what's working, I just don't want them to think I'm insecure."

Lauren, 19: "In the first few weeks I didn't even use my real picture. I still got a date. I mean I told him and sent him a real picture before we met."

The 2 participants that intentionally misrepresented a searchable attribute did so with their weight and sexual orientation, respectively. Jack exaggerated his weight by listing himself as "average" while considering his actual body type to be overweight. Elisa listed her sexual orientation as bisexual because she wanted to meet more platonic friends of the same sex face-to-face.

Jack, 28: "I do lie about my body weight. I say 'average' [on my profile page] because I think the average American is overweight."

Elisa, 27: "I'm listed as bisexual, but I'm not really into girls sexually [...] I went out with one girl. I think she could tell that I wasn't a real lesbian."

5.2 Impression Formation

5.2.1 Impression formation involves searchable attributes for immediate decision-making, and experiential attributes for gradual qualification towards a face-to-face meeting.

Physical attraction based on profile pictures was a requirement for most participants to meet another user in person for romantic purposes. However, searchable and experiential attributes also

played integral roles in this decision process. Some participants had specific searchable attributes as "deal breakers"—such as smoking or a minimum height—that they used to immediately disqualify a potential partner. Profile pages were used to evaluate these searchable disqualifiers. Most participants then used experiential traits to decide if the user qualified for a private messaging conversation (based on open-ended profile content), and then if they qualified for an in-person meeting based on the private message conversation. This means that while most relied on profile pages to form preliminary impressions, a bulk of impression formation for the purpose of face-to-face meetings was done during private messaging.

Amanda, 28: "First I read his message. If it's a one-liner like 'hi,' I won't even bother with the profile. [...] Then I'm looking for immediate disqualifiers on his profile—religion, politics, and height. [...] During messaging [...] I want to see his conversational abilities too."

Michael, 24: "I'll look at the profile first. If their physical features catch my eye I'll look for grammatical errors [in the open-ended profile elements]. This tells me a lot about a girl's intelligence."

Rose, 24: "I'm tall, 5'9", so I check that. But the message has to be good first. [...] Then we'll have a conversation [through messaging] and schedule a date through that."

Aside from searchable "deal breakers," recipients of the initial private message often judged message content more harshly than profile content. Most participants, especially female and gay users, discussed how they would not respond to a communication partner if the content of the initial message received did not immediately catch their attention. This was because our female and gay participants were receiving considerably more private messages than straight males (often 20-60 weekly, versus 0-5 for straight men). Several participants complained that profile pages felt like generic advertisements that could not be used to adequately assist in their evaluation of a communication partner.

Jonathan, 32: "I almost didn't message [my current boyfriend] back. He didn't have good pictures, but I liked his message. I'm generally more interested in the message."

Carry, 19: "I don't like long messages, or ones that are immediately sexual, or bring up an ex, or sound like they're not taking it seriously. [...] Yeah, I'll reject a guy purely on this."

Straight men expressed a great amount of anxiety when it came to private messaging because they knew one "bad" message could end the conversation abruptly. This anxiety was most pronounced when attempting to move communication off the system to text messaging, phone calls, or an in-person meeting. Some men were so wary of rejection that they would stop responding permanently during a private messaging conversation if they could not think of something funny or witty to say.

Barry, 24: "If I don't know what to say, I just don't respond. [...] It's my fear of failure. I'm trying to work on that."

Moving communication to a phone conversation or in-person meeting was a "moment of truth" in private messaging, in which a private messaging conversation would immediately end if a phone number or date idea was given too soon. "Too soon" did not coincide with a fixed time frame or number of messages, but rather the comfort level of the participant during the messaging conversation. This made private messaging an intense focus for most users. Female participants said a phone number given too

early was a sign of poor social skills and made them feel uncomfortable. They seldom responded to any future messages from a man if this happened. Conversely, female participants recalled feeling annoyed when men took too long to give their phone number. They did not feel it was the woman's role to escalate communication off the system and would stop responding if the man waited too long to give a phone number or propose a date.

Rachel, 28: "Sometimes the conversation can get really long—as many as 57 messages this one time—because I'm waiting for the guy to pull the trigger [and ask me out on a date]. I can't bring myself to do it. That's his role."

Rebecca, 25: "Some guys take too long. By the time he gives his number, I'm not actually interested anymore. But if it's too early, I'll stop responding completely. Either way the messaging is done."

5.2.2 Users feel limited in their abilities to form impressions of experiential attributes online.

A majority of participants felt limited by existing communication methods on the system for impression formation. Many of them did not expect to have interpreted their communication partners accurately before meeting them face-to-face, especially in terms of experiential attributes.

Connor, 24: "The people you meet in person, they're always a little off. That's always going to happen."

All but 4 participants met at least one other user face-to-face. A majority of their first face-to-face meetings, however, did not result in a second meeting. Seldom did participants consider their first face-to-face meeting with another user to be a "date," but rather a chance to validate and build on impressions formed online. Participants often planned their first face-to-face meetings to be non-committal, in which they could easily leave early if they determined their online-based impression to be too inaccurate. Common first meeting plans involved coffee shops and similar public areas because these locations afforded a "quick exit" for participants without a significant time investment.

Ben, 26: "I hate calling it a 'date date.' I like it to start as friends first and see if we have things in common."

Javier, 24: "It's not really a date. More like a pseudo-date because it's more like an interview. I'll schedule something more romantic for the second date if it goes well."

Marissa, 19: "We'll pick places that don't require much commitment, like coffee. [...] Definitely not dinner. I don't want them to look at me eating."

If the first meeting was going well, however, participants explained how they would alter the meeting in real time to incorporate more romantic activities.

Connor, 24: "I go into it like we're just hanging out. But during that first hang out, if I'm attracted, okay now it's a date. It's really after it started do I determine if it's a first date."

Most online-based impressions were deemed incorrect once participants met their partner face-to-face. Impressions deemed incorrect during face-to-face meetings were commonly due to experiential attributes rather than searchable attributes. Most found their partners to be less attractive than their online impression led them to expect, but a few participants recounted

finding some partners to be more attractive or compatible than they were expecting based on the impression they formed online.

Lara, 21: "The second guy I met was very reserved in-person. Our personalities didn't jive. [...] We never spoke again."

Jack, 28: "There was one date that just went horribly. She was just dumb. We went out to dinner and she was like 'what's a scallion?' I had no hint of that online, that she was that stupid."

Connor, 24: "She came off as really cool and nonchalant [in her messages]. She's not really like that [in person], but I like her for totally different reasons now."

Some participants had a tendency to attribute an unexpected face-to-face impression to intentional deception, even if their partner did not admit to deceiving purposely. They assumed their partner had intentionally lied about particular qualities, which included both searchable and experiential qualities.

Jackie, 37: "They're trying to portray themselves as looking for a relationship, when they're just looking to get physical."

Carry, 19: "He said he was in law school, but he was totally still in college, I'm sure of it. [...] He kept denying it the whole time."

Other participants acknowledged the possibility that a misinterpretation could have been unintentional, recalling reverse instances in which their partners admitted to misinterpreting them once they met face-to-face.

William, 35: "I'm not sure if it was a misrepresentation on their part, or a miscalculation on my part."

Javier, 24: "The one girl that didn't turn into a relationship, I was too intimidating she said, and too nice. [laughing] Yeah that doesn't make sense, but that's what she thought."

5.3 Relationship Goals

5.3.1 Despite primary goals being of a romantic nature, users also join the online dating system to improve their social skills and make friends.

The majority of our interview participants viewed online dating as a general online introduction platform to meet new people for both romantic and platonic reasons. More than half of the participants were open to meeting friends on the system for platonic reasons and considered it an important reason for why they joined the online dating system. For example, Hannah explained that she and her college friends use online dating as their primary way to meet new people.

Hannah, 19: "This [online dating system] has literally become our way of life. This is how we communicate with people now."

Participants both male and female reported exchanging private messages with and meeting face-to-face with users because they had similar interests, despite not being romantically attracted. Some male participants discussed having trouble talking to women in the real world and felt platonic social interaction online would improve their dating skills. Four male participants had never met another online dater face-to-face and each one of them considered general social interaction with female users online and off line to be their immediate goal for using the system. Arnold and Isaac were two such participants.

Arnold, 24: "I love talking about Obama and politics [in my private messages]. I also ask a lot of questions at the end of my messages. I want to make it easier for them to respond."

Isaac, 37: "I'm looking for real talk. I don't like talking to people in bars because you can't have conversations...online dating is so empowering because I can send these longer, deeper messages."

Other participants joined the online dating system to find new friends when they moved to a new area. Erica, for example, relocated to be a nurse. She worked 12-hour shifts, which made meeting new people in real life difficult. Mark also used the online dating system to find new friends and romantic partners when he moved to an unfamiliar city for a job.

Erica, 28: "I moved here almost a year ago. I didn't know anybody. [...] And I wanted to meet people outside my direct social circle. So I figured a really good way to meet some people and get to know the area a little bit was to go on online dating."

Mark, 25: "After coming here three months ago, I started using [the online dating system] because I don't really know anyone yet."

None of the participants with platonic interests were against sexual or romantic relationships. When pursuing platonic relationships, participants used only experiential traits and common interests to evaluate their communication partners. Physical attraction was not a requirement for exchanging private messages or meeting face-to-face. When the primary goal was to build platonic relationships, participants also tended to respond to every private message sent to them and sometimes did not even read the profile page of a user they were conversing with for platonic reasons.

Edward, 25: "I met four girls just to hang out. I usually invite them to parties at my bar. [...] I met one girl where I didn't even look at her profile."

Lara, 21: I really like Star Trek and Lord of the Rings. If you want to talk about that, I will respond, even if I'm not interested [romantically] at all."

Platonic relationship goals sometimes led to unintentional misinterpretations during in-person meetings if participants did not explicitly clarify their platonic interest. Connor said most of the women he met on the system only had romantic relationship goals and assumed his willingness to meet face-to-face meant he was romantically attracted.

Connor, 24: "I think she thought it was a date, but I wasn't attracted to her like that. We never messaged each other again after that."

6. DISCUSSION

Our data from interviewing 41 online daters indicate that there are several frustrations and struggles they face concerning impression management and impression formation. While technology enables daters to reach out to more people, it also increases the likelihood of unanticipated communication breakdown.

Participants expressed considerable frustration regarding private messaging conversations that ended abruptly without explicit understanding of why they ended. Aside from a ratings feature and a list of users that visited one's profile, users were left to speculate implied feedback on their own. While this implicit feedback may tell the user the valence of the impression formed about them—i.e. a lack of a response implies a negative

impression—it fails to help the user understand what information contributed to that impression. Online dating systems do not provide explicit feedback to users about their conveyed impressions, therefore hindering their impression management abilities. Users do not know if and how they are being misinterpreted or what behavior is contributing to these interpretations. As a result, users are largely missing the type of feedback integral to Bozeman and Kacmar's model of impression management, which can guide them in altering their behavior to better achieve their desired impression.

Social Exchange Theory explains human relationships in terms of cost-benefit analysis [12]. The two people involved in a social exchange weigh the costs and rewards of that given exchange. If they deem the costs to be higher than the rewards, the exchange is discontinued. If we view a private messaging conversation in online dating as a social exchange, a discontinued conversation would be the result of one user evaluating the costs of the conversation to be higher than the rewards. It was typically women who discontinued conversations according to our interviews. This makes sense considering women receive considerably more messages than men, often to the point of being overwhelmed. Women can thus afford to judge the rewards of a given conversation more stringently because they will have a number of new men messaging them in the near future. Conversely, users who do not receive many messages—often straight men—will rarely consider the costs of continuing a conversation to outweigh the expected benefits. Unfortunately, social exchange is discontinued as soon as one user's perceived costs outweigh the expected rewards, meaning the other user has no opportunity to gather feedback as to what contributed to this decision.

Challenges of self-presentation seem to directly affect impression formation capabilities. Users misjudge the online daters they meet in person so often that they have come to expect a disconnect between impressions formed online and impressions formed in person. If self-presentation abilities can be improved through more informative feedback, impression formation would benefit as well because users could learn how to avoid the behavior that tends to result in misinterpretation and/or perceived costs during social exchange. The key design implication of this study is thus the need for system mechanisms that deliver explicit and consistent feedback about conveyed impressions to online daters. A potential argument against this design implication is that users could use such feedback to intentionally misrepresent themselves in an attempt to create a more attractive impression. However, we have found that users largely do not want to misrepresent themselves because they want their online introductions to lead to a successful relationship in real life, whether that be platonic or romantic. They do not believe deception will help them form relationships in the physical world because intentionally misrepresented qualities would be exposed during face-to-face meetings.

The large number of participants that exhibited a strong desire to meet other users for platonic reasons suggests that individuals turn to online dating systems to meet a variety of social needs. As a result, design implications derived from online dating research are germane to a variety of social needs besides romance. Online dating systems can be considered a subset of online introduction systems geared to facilitate face-to-face meetings with newly introduced users. The findings described in this paper have generalizable benefits to this online introduction domain at large. Popular systems for online introductions, as mentioned in the background section, permeate many different markets including

business, sports, and traveling. The design implication of providing feedback mechanisms can readily be applied to other domains for helping job seekers better convey their marketable skills on *LinkedIn*, or helping travellers form clearer impressions of strangers they are about to spend the night with from *Couch Surfing*, among other examples.

Despite the wealth of insight into online dating perceptions and self-presentation practices that this interview study has provided, it still leaves us with a major question: when and how often are users getting misinterpreted in online dating? Most of our participants say they misinterpret the people they meet, but we do not know where in the communication process this misinterpretation is occurring or what behavior contributes to it. We do know that users are frustrated when their communication partners stop responding, but misinterpretation may not be the only reason for a lack of response. Some users may actually be getting interpreted as they intended, with this interpretation simply being deemed unattractive. Unfortunately, this interview study cannot differentiate between conversations that end based on correctly interpreted information, incorrectly interpreted information, or other circumstances external to the system such as life events that prevent a user from continuing communication.

This study is one of the first to investigate impression management and formation behavior throughout the entire online dating process. It reveals that impression management goes beyond the profile page and relies heavily on private messaging, yet users find neither of these tools satisfactory for their impression management and formation needs. Our future work aims to analyze impression management and formation from the perspective of both users in a given communication. This will allow us to directly compare the intended impression and perceived impression of the same user, revealing if misinterpretation is indeed occurring, and where in the online dating process this misinterpretation is happening.

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