IT HAPPENED ON TINDER

REFLECTIONS AND STUDIES ON INTERNET-INFUSED DATING

EDITED BY
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It Happened on Tinder:

Reflections and Studies on Internet-Infused Dating

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institute of
network cultures

CONTENTS

DESIGN

CULTURE

1: INTRODUCTION

AMIR HETSRONI

How do I get the girl's number? When is the right time to call? If her mom picks up the phone – do I leave a message or just hang up? These were typical questions I asked as a teenager in the 1980s struggling with romance pains. Obviously, I had no Tinder account or OKCupid subscription. I had no smartphone or even a simple Nokia cellphone. In fact, I did not have Internet. I barely had i386 IBM compatible desktop (what else?) connected to a matrix printer in which I printed love letters that I handed to girls I met here and there, mainly at school, expecting accolades for my rather innovative use of advanced technology. Unfortunately, in most of the instances I was scolded for being *non-romantic*, but I am still sure that I was ahead of the time.

So much has changed in just three decades. Nearly a quarter of current US newlyweds met first online often in a dating sites or through one of the romance targeted apps. The change is not just a matter of location – from meeting at a bar to meeting on the internet - but also manifested in relationship style. Expectations for long-term heterosexual monogamy have been replaced by a plethora of romantic formats - from polyamory through pansexuality and up to demi sexuality. The English language has been enriched by new vocabulary that represents new types of relations – from ghosting and up to sexting.

It is possible that the mediated environment makes allegedly deviant relations come true because one feels less inconvenient to write online that s/he is searching for a sex slave than to do it in a face-to-face conversation, but it is also not out of the question that the virtual surroundings do not change romance as much at it reflects changes that have occurred anyway. And, yet, the process can also be reciprocal. This way or another, as Bob Dylan sang five decades ago - The times they are a-changin'. Our book attempts to map and analyze changes in romantic habits and conceptions as they relate to online dating and to look at online dating as reflection and precursor of changes in romance.

The book is divided into four thematic sections: **Gender, Users, Design, and Culture**. The titles of the sections constitute the major factors that shape online dating: the sex and sexual orientation of daters, their personality, the interface of the website or the app and the cultural context outside the mediated environment. The first section, **Gender**, is about the way our biological sex and our sexual orientation i.e. whether we search for a partner of our sex or a member of the opposite sex leave a mark on online dating. This section starts with a study entitled **The Myth of the Siren's Song: Gendered Courtship and Sexual Scripts in Online Dating** by **Julie M. Albright and Steve Carter**. Their article uses the siren metaphor and elucidates the current state of online courtship scripts using data from a large online dating site. The analysis reveals that women are more successful at flirting and at reading flirting cues, however, most of them (including surprisingly women under the age of 30), still subscribe to traditional gendered courtship scripts and agree that men should make the first move and control the relationship. Men were found to be more progressive in their courtship

attitudes than women and more likely to approve of confident women making the first move. The implications of this gender disparity in courtship scripts are discussed in relation to technological innovations and suggestions are offered how more egalitarian courtship can become the norm.

The second entry in the Gender section is entitled **Gender Differences in Online Dating Experiences** by **Milena R. Lopes and Carl Vogel**. The authors examine the attitudes of male and female Tinder users in order to determine whether there is a gendered perception of experiences mediated by Tinder. A mixed-method approach reveals differences with respect to several aspects of the online dating experience. The findings indicate gender differences in perceived respect from others on Tinder and are discussed in relation to the interface of Tinder. Suggestions are made how Tinder and other apps can be perceived as more efficient.

The third and final study in the Gender section is entitled **Stereotypical Gender Attributions across Sexual Orientations on Tinder: Evidence from Turkey** by **Amir Hetsroni, Meriç Tuncez, and Mina Özdemir**. The authors investigate the stereotypical and gendered attributions of Tinder users from Turkey and compare the results across sexual orientation lines. A random sample of over 2,500 Tinder profiles were analyzed in search for masculine, feminine and gender-neutral decorative artifacts. The results indicated a significant difference between heterosexual women and lesbians, with the latter adopting less feminine decorative artifacts and displaying more masculine decorative artifacts. The differences among men were not as drastic, however, homosexuals were still slightly more likely to feature feminine and gender-neutral decorative artifacts. These results are discussed in relation to the way homosexuals and lesbians are perceived and perceive themselves in an Islamic mildly patriarchal culture.

The second section, **Users**, is about the way personal characteristics leave their mark on online dating. This section starts with a study entitled **Mirror Mirror on the Wall, Which Dating App Affords Them All? Exploring Dating Applications Affordances and User Motivations** by **Leah E. LeFebvre and Xiaoti Fan**. The authors investigate various affordances of mobile dating apps that are popular in the United States in order to shed light user motivations and relationship development. The most highly ranked social affordances of dating services include accessibility, conversation control and informational control, whereas the most highly ranked motivations for using online dating services are curiosity, relationship-seeking, socializing and passing time. Finally, the authors present a combined model of the influence of media affordances and individual user motivations on relationship initiation and development in dating apps.

The second entry in the Users section is entitled **The Social Exchange Framework and Dime Dating** by **Arrington Stoll**. While stories about dime dating appear quite often in the popular press, only scant research dealt with it hitherto. The author offers a theoretical operationalization of dime dating using the basic economic trade-off between cost and reward. Individual processes by which people communicate their cost-benefit appraisals of dime dating are explored using social exchange theory and the investment model. Stoll examines dime dating, its benefits, and its cost-benefit appraisals through a comparison of for-profit daters with non-profit daters and finds striking similarities in several aspects. The conclusion

of this study is that even when financial incentive is the reason why the relationship starts its persistence depends on the availability of conventional relationship benefits.

The third entry in the Users section is entitled **The Relationship between Romantic Ideals and Online Dating Stigmatization** by **Elisabeth Timmermans and Cédric Courtois**. The authors examine the relationship between romantic beliefs and the practice of online dating. Looking at the stigmatization of online dating, they investigate whether negative attributions of online dating are associated with out-group identification due to the inability to identify with online daters. Over five-hundred Belgians from different cities participated in as survey. The findings indicate normalization of online dating and a complex pattern of gender differences within the online dating sphere.

The fourth and final entry in the Users section is entitled **Justifications for "Ghosting Out" of Developing or Ongoing Romantic Relationships: Anxieties Regarding Digitally-Mediated Romantic Interaction** by **Jimmie Manning, Katherine J. Denker, and Rebecca Johnson**. Textual data obtained from thirty interviews are used to examine the practice of ghosting through which a person suddenly terminates communication with his romantic partner, typically at an early stage of the relationship. Relying on participants accounts of ghosting, the authors investigate themes related to the darker side of ghosting and offer a typology of motivations for ghosting. The typographic analysis reveals three key justifications for ghosting: protection against disrespect, aggressiveness, and abuse, lack of relational development, and situational factors.

The third section, **Design**, is about the way website interface app features impact the process of online dating. This section starts with a qualitative study entitled **"I ❤ U": A Semiotic Analysis of Romantic Relationship Bitmojis on Social Media** by **Abdulgaffar O. Arikewuyo, Bahire Efe-Özad, and Aminat S. Owolabi**. Semiotic analysis is used to map bitmojis that appear in social media chats and to demonstrate how colors and shapes connote love and affection. The findings reveal that the red color is the most dominant sign in conveying romantic feelings in online dating and that various shapes are used to add humoristic touch to the otherwise awkward dialogue typical of early stage flirting.

The second study in the Design section is entitled **Verifying Identities: The Role of Third-party Reputation Information in Online Dating** by **Lara Hallam, Charlotte J.S. De Backer, Sara Pabian, and Michel Walrave**. Hallam and her colleagues explore the lack of a warrant between the presented identity online and the physical counterpart of that identity as offline daters. In a 2 (female vs. male) x 2 (control vs. reputation information) online experiment, over two-hundred participants rated two online dating profiles of the opposite sex - one with no warranting and one with positive reputation information. The results show that all the participants rated the online dating profile provided with positive reputation information as more trustworthy. Further analysis reveals, however, that positive reputation information does not impact the willingness to date offline.

The third and final entry in the Design section is entitled **From Swiping to Ghosting: Conceptualizing Rejection in Mobile Dating** by **Chad V. De Wiele and Jamie F. Campbell**.

This article deals with rejections - one of the most potent relational outcomes in interpersonal relationships. Romantic rejection has been studied extensively in face-to-face contexts, but hitherto it has been given scant attention in online dating research. De Wiele and Campbell set out to fill the gap by identifying behaviors, effects, and outcomes linked to the experience of rejection. In an online survey, the authors analyze few dozen mobile daters and ask them to describe rejection in online dating context. Thematic analysis of the open-ended questions reveals the extent to which online dating apps mitigate the experience of rejection and highlight unique interface affordances of mobile dating.

The fourth and final section in our collection is **Culture**. This section is about the influence of the socio-cultural context in which online daters operate. The first entry in this section is entitled **A Match Made in the Cloud: Jews, Rabbis, and Online Dating Sites** by **Yoel Cohen and Ruth Tsuria**. The authors explore the virtual Jewish dating scene which is a religious niche for online dating and investigate rabbis' opinions on participating in online dating. The rabbis were found to be divided in this subject. The more liberal among them were more supportive of online dating. The rabbis' stream, their openness to online media, and their personal use of online media were found to be positively related to their support of online matchmaking.

Second entry in the Culture section is entitled **Crossing Boundaries? Online Platforms and Interracial Romance** by **Giulia Ranzini**. The author explores how online dating opens new routes for interracial encounters, relationships and even marriages. She asks whether online dating services motivate their users to pursue interracial dating. This chapter looks at the existing research on the role of online dating in romantic decisions, focuses on its desegregating potential and delves into studies on episodes of sexual racism and discrimination. The conclusion is not unequivocal: Online dating sometimes promotes diversity, but it can also reinforce racial prejudices.

The final chapter in the Culture section, which is also the last entry in this collection, is entitled **Missed Connections or Misinterpreted Intentions? The Genre and Violence of Digital Love Stories** by **Brittany Knutson**. This chapter explores a Craigslist page called Missed Connections, which is an online forum swarmed with romance and potential daters. The story of Missed Connections, so goes the chapter, revolves around male and female desire. By entangling the truth behind online and offline identities of Missed Connections users, the author reveals the potentiality, power dynamics, and violence of romance found in a classified ads website created for garage sales.

So, what have we learned? Several paradoxes for sure: Online dating may promote diversity, but it can also reinforce racial prejudices; online dating profiles escorted by positive reputation information about the candidate seem more trustworthy but not more attractive — to name just two. We cannot offer a bottom line, perhaps because there is none. Online dating in a conservative culture like Orthodox Judaism when the participants aim to get married is very different from homosexual courtship in Grindr where the explicit aim is finding a very short-term hookup partner. Still, we can say that the outcome of online dating depends upon four major factors - gender, personality, design, and culture.

We hope that this collection helped, at least to an extent, to unmask the puzzle. We thank all the authors whose work is included in this collection. We also thank the many whose submissions were rejected. We are indebted to our publisher, Institute of Network Cultures. In particular, we would like to thank Miriam Rasch and Geert Lovink who believed in us throughout the long route. Last but not least, on a personal note, the author of this introduction extends his gracefulness to Meriç Tuncez the co-editor whose contribution to the book is priceless. Of course, we are also grateful to Koç University for providing us with bread and butter while we were working on this volume.

Last but not least, the answer to the inevitable question: 'How successful have I been in online dating?' - The answer is not at all. Maybe I am too old. Possibly, my personality does not fit in. Not out of the question that I am oddly snobbish. This way or another, I will continue to court in non-virtual venues.

GENDER

2: THE MYTH OF THE SIREN'S SONG: GENDERED COURTSHIP AND SEXUAL SCRIPTS IN ONLINE DATING

JULIE M. ALBRIGHT AND STEVE CARTER

Sirens have long served as a figure of both fascination and fear throughout history. The siren – the sexually aggressive, alluring, confident young woman – has been a longstanding negative role model that has helped to define women's 'appropriate' role within courtship and romantic relationships. The siren can be traced all the way back to 300 B.C., to Homer's *Ulysses*, where she illustrates the dangers of the sexually aggressive woman. In the story, the siren's songs sung from the rocks are so bewitching that passing mariners who heard them would throw themselves into the sea, or, distracted, steer their ships into the rocks, leading to their demise. The sirens represented an antithesis to the goal of marriage and family: The text says that, for the man who succumbs to the song of the siren there will be 'no welcome from his wife, no little children brightening at their father's return'.[1]

Sirens are such a powerful negative role model that they have been re-imagined by almost every generation since: In the Middle Ages, sirens were re-invoked in musical texts, depicted as part bird, part fish or nude, symbolizing lustful immodesty and prostitution.[2] In this excerpt from the musical theory *Tractatulus de differentiis et gradibus cantorum*, Arnulf of St Ghislain describes the siren's allure:

> So it is that these women… earthly Sirens — enchant the bewitched ears of their lis-
> teners and they steal away their hearts, which are for the most part lulled by this kind
> of intoxication, in secret theft, and having snatched them and made them subject to
> their will, they then enslave them and lead them, shipwrecked by the beauty, alas!,
> of their prison, into an earthly Charybdis in which no kind of redemption or ransom is
> available.[3]

Using Saussure's model of semiotics to understand the structure of meaning the siren represents, the siren acts as a signifier for women's connection to nature. Sherry Ortner[4] has argued that women's subordinate status in most societies can be traced back to this nature/culture dichotomy, where women are more closely identified or symbolically associated with nature, leaving men squarely situated squarely within the realm of culture. Since it is culture's project to subsume and transcend nature, in this story, man's domination of woman

1   Homer, & Pulleyn, S. (2019). *Odyssey*. Oxford: Oxford University Press.
2   Leach, E. (2006). "'The little pipe sings sweetly while the fowler deceives the bird': Sirens in the later middle ages." *Music and Letters*, *87*(2), 187-211.
3   Leach, E. E. (2007, p.265). *Sung birds: Music, nature, and poetry in the later Middle Ages*. Ithaca: Cornell Univ. Press.
4   Ortner, S. B. (1974). Is female to male as nature is to culture? In M. Z. Rosaldo and L. Lamphere (eds), *Woman, culture, and society*. Stanford, CA: Stanford University Press, 68-87.

becomes natural and inevitable. Half woman, half fish or half bird, the sirens accentuate this relationship of woman to nature; since they are depicted as only partly human, the siren is nature, embodied. The siren thus represents one half of a dialectical relation with man: To maintain his dominion over nature (and her), he must stay firmly lodged in his world of culture, 'staying on the boat' as it were, and away from her, else be dragged down by lust and other 'earthly desires', thereby meeting inevitable treachery. Claude Levi-Strauss[5] has argued that texts such as Homer's *Odyssey* are attempts to reconcile or deny the inevitable contradictions of culture - that is, man's inevitable and in some ways - doomed struggle to dominate and overcome nature.

The story of the sirens has served as a negative role model for generations in terms of gendered sexual behavior for both men and women. Researchers have found that people can be motivated by either positive or negative role models: Positive role models motivate by illustrating 'an ideal, desired self, highlighting possible achievements one can strive for',[6] whilst negative role models inspire by 'illustrating a feared, to-be-avoided self, pointing to possible disasters and future outcomes to be avoided'.[7] Since the advent of mass media like radio and television, popular culture has become an important vehicle for the transmission of these role models. Social learning theory suggests that young women look to media models to learn their 'proper' gender scripts,[8] and are most likely to model behavior which leads to desired or valued outcomes.[9] The modern-day siren continues to show up as role model in media, now figured as a form of 'fallen femininity', her dual nature of pleasure and negative ethical features holding the power of seduction.[10] In his book *The Art of Seduction*, author Robert Greene[11] argues that the siren has not been relegated to the past but is instead more appealing now to men than ever, in a world which has become 'safe and secure' with 'less chance for adventure than ever before'.[12] Greene says the siren represents 'a powerful male fantasy of a highly sexual, supremely confident, alluring female offering endless pleasure and a bit of danger'.[13]

In modern popular culture, the siren motif, explicit or implicit, appears in film, music videos, television, and video games. For example, many films have divided females into 'good' and

5   Strauss, A.L. (1987). *Qualitative analysis for social sciences*. New York: Cambridge University Press.
6   Lockwood, P., Jordan, C. H., & Kunda, Z. (2002). Motivation by positive or negative role models: Regulatory focus determines who will best inspire us. *Journal of Personality and Social Psychology, 83*(4), 854-864. doi:10.1037/0022-3514.83.4.854.
7   Lockwood, P. (2002). Could it happen to you? Predicting the impact of downward comparisons on the self. *Journal of Personality and Social Psychology, 82*(3), 343-358. doi:10.1037/0022-3514.82.3.34.3.
8   Bandura, A. (1977). *Social learning theory*. Englewood Cliffs, NJ: Prentice-Hall; Pearl, D., Bouthilet, L., & Lazar, J. (1982). Television and behavior: Ten years of scientific progress and implications for the eighties. Rockville, Md: U.S. Dept. of Health and Human Services, Public Health Service, Alcohol, Drug Abuse, and Mental Health Administration, National Institute of Mental Health.
9   Bandura, A. (1989). Social cognitive theory. In R. Vasta (Ed.), *Annals of child development*. *Vol. 6. Six theories of child development* (pp. 1-60). Greenwich, CT: JAI Press.
10   Baudrillard, J. (1990). *Seduction*. London: Maximillian.
11   Greene, R. (2004). *The art of seduction*. London: Profile.
12   Greene, *The art of seduction,* p.11.
13   Greene, *The art of seduction.*

'bad' roles – either as good 'wife and mother' (asexual, affable and dowdy), or as the bad sexual and self-serving 'other woman'. According to Berland and Wechter,[14] configurations of the 'de-eroticized stay at home mom help to reduce anxiety and maintain the incest taboo, the stability of the home and the status quo'. Actresses referred to as 'screen sirens', like Bridgette Bardot, Jane Mansfield or Marilyn Monroe, have also been called *femme fatales* ('fatal women') or *vamps* (short for 'vampires') to signal their treacherous nature. Sirens also figure prominently in film noir and in modern films such as David Lynch's *Blue Velvet*, in the form of Isabella Rossalini's dark haired, smoldering, torch singer Dorothy. Perhaps the most impactful screen siren was 'Alex' in *Fatal Attraction*. Alex was unusual in that she was figured as a career woman (rarely showed in earlier films), but also that she was the sexual aggressor, shown initiating passionate contact through kissing, erotic thigh-rubbing, and other stimulations usually relegated to the man. Rather than being a watershed moment of sexual liberation however, Alex became a symbol of the siren's destructive capabilities. The subtext of the film is best summarized by Marcia Kinder's quote, 'It is not sexual repression that causes psychosis. It is sexual liberation'. Her madness becomes the film's focus, yet critics have pointed out that there is no reason why the attractive, competent businesswoman Alex should have become the disheveled, homicidal psychotic she ends up being at the end.[15]

Sirens also pop out in music videos e.g. earl on via chanteuses like Madonna, Christina Aguilera and Lil' Kim. Television soap operas have also featured the siren, figured in characters such as 'Sam' on *Sex and the City* and 'Edie' on *Desperate Housewives*, and in 2014-2015, by a dangerous mermaid in the cable TV show *Siren*. These fictional TV sirens are single, financially independent, and sexually aggressive; they typically bear men's names, suggesting they have sex 'like men', i.e., outside the bounds of emotional bonds or committed relationships.[16] *Sex in the City*'s original premise in its pilot episode was: 'Can women have sex like men?' Shows such as *Sex and the City* have been called 'post-feminist' narratives, since the characters have inherited the fruits of second wave feminism (i.e., independence, careers, money), yet struggle to balance work and relational and/or sexual needs.[17] Despite their post-feminist leanings however, these shows return to a traditional feminine narrative by the characters' constant search for 'Mr. Right',[18] showing that any deviation from traditional courtship scripts is doomed for failure, and suggesting that women 'naturally' tend toward monogamy. Configured simultaneously as seductive and threatening, the siren in popular culture is dangerous precisely because she eschews traditional gendered sexual scripts that dictate she 'play the girl' by taking on a passive role; her apparent freedom to choose by 'calling the shots' in her own life is presented as a seductive siren's song for modern women.

14   Berland, E., & Wechter, M. (1992). Fatal/fetal attraction: Psychological aspects of imagining female identity in contemporary film. *Journal of Popular Culture*, *26*(3), 35-45. doi:10.1111/j.0022-3840.1992.2603_35.x.

15   Berland & Wechter, Fatal/fetal attraction.

16   Arthurs, J. (2003). Sex and the city and consumer culture: Remediating postfeminist drama. *Feminist Media Studies, 3*(1), 83-98. doi:10.1080/14680770303794; Moseley, R. & Read, J. (2002) "Having it Ally": Popular television (post)feminism. *Feminist Media Studies, 2*(2), 231-249.

17   Gerhard, J. (2005). Sex and the City: Carrie Bradshaw's queer postfeminism. *Feminist Media Studies*, *5*(1), 37-49. doi:10.1080/14680770500058173.

18   Gerhard, Sex and the City.

Young women are thus receiving mixed messages about what their 'proper' role in courtship is now through the multiplicity of opposing roles they see in the media, leaving them with a conflicted set of desires, roles, and goals. This leads us to wonder how in today's world these cultural scenarios are being synthesized, internalized and re-enacted in the interpersonal scripts of heterosexual women, particularly given the internet and the myriad possibilities for trying out new behaviors and romantic arrangements such as polygamy, sex fluidity, etc.

Script theory has been used by researchers to help elucidate the ways these kinds of cultural models and images help to dictate and shape 'appropriate' masculine and feminine roles that men and women may play in heterosexual romantic relationships.[19] Michel and Gagnon describe three different 'levels' of these scripts: 'cultural scenarios', or the social norms acquired through collective life derived from culture, media, schools and peers; 'interpersonal scripts' representing shared or routine patterns of social interaction which guide behaviors; and 'intrapsychic scripts', which are the internalized expectations derived from larger cultural expectations.[20] In heterosexual courtship, these scripts have traditionally dictated an active, aggressive role for men and a recreational view of sex, while women are expected to be passive and receptive, with sexual activity condoned within the context of a love or committed relationship.[21] Women who initiate relationships are seen as sexually available, whereas men who fail to pursue courtship opportunities are questioned in terms of their masculinity or sexual identity.[22] Studies generally find support for a 'strong' sexual double standard, where young adults report that men are likely to be labeled positively as 'players' or 'studs' for casual and/or frequent sexual encounters whereas women are negatively labeled as 'sluts' or 'hos' for similar activities.[23]

Though women have historically been figured tied to nature and men to culture, in recent history this gendered nature/culture divide has been reversed, with men's libido naturalized, and culture stepping in to diminish or completely erase women's sexual drive via the 'sexual double standard' which attributes to men a 'naturally' higher libido, or sexual drive. This reversal of the nature/culture dichotomy for men and women may be traced back to the Victorian Era in the United States, inspired by what Welter has termed the 'cult of true womanhood',[24] where women were lauded for their morality and sexual purity, their supposed

19   Schwartz, P. (2000). Creating sexual pleasure and sexual justice in the twenty-first century. *Contemporary Sociology*, *29*(1), 213-219. doi:10.2307/2654945.
20   Kimmel, M. S., & Plante, R. F. (2007). Sexualities. *Contexts, 6*(2), 63-65. doi:10.1525/ctx.2007.6.2.63; Gagnon, J. H. (1973). Scripts and the coordination of sexual conduct. In J. K. Cole and R. Deinstbier (eds) *1972 Nebraska Symposium on Motivation*, Vol. 23. Lincoln: University of Nebraska Press.
21   DeLameter, J. (1987). Gender differences in sexual scenarios. In K. Kelley (Ed.), *Females, males, and sexuality: Theories and research* (pp. 127-139). Albany, NY: State University of New York Press; Gagnon, Scripts and the coordination of sexual conduct.
22   Seal, D. W., & Ehrhardt, A. A. (2003). Masculinity and urban men: Perceived scripts for courtship, romantic, and sexual interactions with women. *Culture, Health & Sexuality*, *5*(4), 295-319. doi:10.1080/136910501171698.
23   Bogle, K. (2008). *Hooking up: Sex, dating, and relationships on campus*. New York: New York University Press.
24   Welter, B. (1966). The cult of true womanhood: 1820-1860. *American Quarterly*, *18*(2), 151-174. doi:10.2307/2711179.

lack of sexual passion ensuring domestic harmony.[25] Sociobiological theories have tried to explain man's supposed higher sex drive as a natural, biological imperative to 'spread his seed' by sleeping with as many women as possible.[26] This type of 'naturalizing' or biologizing of gendered social behaviors remains a common ideological practice designed to maintain the status quo of gendered power relations.[27] Connell argues that such 'naturalization' is not a naïve mistake about what biological science can and cannot explain; instead, at a collective level, it is a highly motivated ideological practice which constantly overrides the biological facts.[28] Research supports Connell's supposition: One study found women match men in the number of sex partners they report when they believe they are attached to a lie detector; sans lie detector, women 'round down' their number of sexual partners, while men round up.[29] Another investigation found that the majority of women agree or strongly agree that women enjoy sex as much as men,[30] while a laboratory experiment measuring subjects' brain responses to erotic images showed no consistent and conclusive difference between the sexes.[31] These studies suggest the strength of social prohibition against the overtly sexual woman, and that women may go to great lengths to mask their sexual desires to adhere to traditional gendered courtship scripts as a strategy to successfully attract and keep a mate.

Despite the availability of role models for the sexually liberated woman in the media, research has shown that courtship scripts in the United States largely remain traditional,[32] particularly for younger women,[33] and that traditional gendered scripts continue to dominate.[34] These scripts strongly suggest that men should make the first 'move',[35] initiating both the first

25   Donovan, B. (2006). *White slave crusades: Race, gender, and anti-vice activism, 1887-1917*. Urbana: University of Illinois Press.

26   Oliver, M. B., & Hyde, J. S. (1993). Gender differences in sexuality: A meta-analysis. *Psychological Bulletin, 114*(1), 29-51. doi:10.1037/0033-2909.114.1.29.

27   McCaughney, M. (2007). *The caveman mystique: Pop Darwinism and the debates over sex, violence and science*. New York: Routledge; Connell, R. (2009). *Gender and power: Society, the person and sexual politics*. Cambridge: Polity; Gagnon, J. H. (1990). The explicit and implicit use of the scripting perspective in sex research. *Annual Review of Sex Research*, *1*, 1-43.

28   Connell, Gender and power.

29   Alexander, M. G., & Fisher, T. D. (2003). Truth and consequences: Using the bogus pipeline to examine sex differences in self-reported sexuality. *The Journal of Sex Research*, *40*, 27-35.

30   Milhausen, R., & Herold, E. (2002). Reconceptualizing the sexual double standard. *Journal of Psychology & Human Sexuality*, *13*(2), 63-83. doi:10.1300/J056v13n02_05.

31   Georgiadis, J., & Kringelbach, M. (2012). The human sexual response cycle: Brain imaging evidence linking sex to other pleasures. *Progress in Neurobiology*, *98*(1), 49-81. doi:10.1016/j.pneurobio.2012.05.004.

32   Morr Serewicz, M., & Gale, E. (2008). First-date scripts: Gender roles, context, and relationship. *Sex Roles*. *58*(3-4), 149-164.

33   Allard, E. E. (2013). *Young and midlife single (or recently single) heterosexual North American adults' typical first date scripts and their retrospective perceptions of their first date experiences* (Doctoral dissertation, The University of Guelph, Guelph, Ontario, Canada). Retrieved from https://atrium.lib.uoguelph.ca/xmlui/handle/10214/7300.

34   Seal & Ehrhardt, Masculinity and urban men; Wiederman, M. W. (2005). The gendered nature of sexual scripts. *The Family Journal, 13*(4), 496-502. doi:10.1177/1066480705278729.

35   de Weerth, C. D., & Kalma, A. (1995). Gender differences in awareness of courtship initiation tactics. *Sex Roles, 32*(11-12), 717-734. doi:10.1007/bf01560186; Renneger, L., Glade, T., & Grammer, K. (2002). Getting that female glance: Patterns and consequences of male verbal and non-verbal behavior in

date[36] and further sexual activity.[37] Women are proscribed from such sexual assertiveness,[38] and instead are encouraged to play the passive, receptive role of relational and sexual 'gatekeeper',[39] using their sexuality as bait to 'catch' a husband rather than for its own pleasures. To adhere to these scripts, women will 'selectively self-present',[40] since women can face negative consequences for initiating sexual relations.[41] For example, husbands report negative feelings when wives show more sexual initiation than they do.[42] Perhaps wary of possible sanction (or maybe fearful of looking 'too sexual'), women with intense sexual drives may modify themselves to adhere to their expected gender role,[43] creating a self-fulfilling prophecy of gendered scripts related to sexuality.[44] Rutter and Schwartz[45] argue that if sexual initiation was purely a matter of sex and not gender (with the man having a higher biological 'drive') it would not matter who initiated the sex. What these studies underscore is that sexual initiation is not just a matter of passion but also a case of culture where class and power play a role: As Foucault puts it, sexuality is not just 'a stubborn drive… It appears rather as an especially dense transfer point of relations of power'.[46] Though some women have tried to take up sexual activity as a mark of gender independence (a la Sam in *Sex in the City*), termed alternatively 'babe feminism' or 'slut feminism', they remain a minority.

Traditionally, the seeds of courtship have been planted face to face through flirting, with romance blossoming out of a gaze across a room, a lift of an eyebrow, a quick look away, and perhaps a smile or nervous giggle.[47] Flirting is the vehicle for communicating sexual and romantic interest in a potential mate.[48] In addition to non-verbal cues like gazing or smiling, flirting can entail physical cues such as interpersonal touching.[49] Flirting is designed to illicit

courtship contexts. *Evolution and Behavior*, *25*, 416-431.

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43   Schwartz, Creating sexual pleasure and sexual justice in the twenty-first century.

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45   Rutter & Schwartz, *The gender of sexuality*.

46   Foucault, M. (1990, p.103). *The history of sexuality: An introduction, Volume 1*. New York: Vintage Books.

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a romantic overture by a potential mate, and it achieves this goal: Research has found that women who flirt are most often approached by men.[50] Though both men and women flirt, male dominance and control over dating dictates the man be the initiator, initiating the date, planning and paying for the date, and initiating sexual activity.[51] Some research suggests that these scripts may be changing, with younger women (college age) more willing to initiate a first date.[52] However, such initiation may come at a cost: Men who accept women-initiated first dates have a heightened expectation for greater sexual involvement on the first date, an expectation that women do not share.[53]

Despite the fact that the media provide cultural scripts and models of sexually assertive women, changing social norms have not had much effect on male and female roles in early relationships. By the late 20th century, gender roles in relationship initiation were still very similar to those of the 1950s.[54] However, the relative anonymity of dating and courtship initiation over the internet may give women a chance to experiment with non-traditional sexual scripts online. The internet has become a place where an increasing number of people are going to meet friends and find romantic relationships,[55] to find casual sexual 'hook ups'[56] or discreet extra-marital affairs.[57] Meeting online is now the second most common way people meet their spouses.[58] One-in-five (18- to 24-year old) (22%) now report using mobile dating apps like Tinder, Grindr, and others for meeting romantic partners.[59] Early internet researchers claimed that the internet would usher in a 'new frontier' where gender and other status-related cues would be neutralized or erased altogether,[60] allowing women and men

nonverbal behaviors. *Human Communication Research, 10*, 351-378.

50 Moore, M. (1985). Nonverbal courtship patterns in women. Context and consequences*. Ethology and Sociobiology, 6.* Retrieved from http://search.proquest.com/docview/1300240249/.

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58 Smith, A., & Anderson, M. (2016, February 29). 5 facts about online dating. Retrieved from http://www.pewresearch.org/fact-tank/2016/02/29/5-facts-about-online-dating/.

59 Smith & Anderson, 5 facts about online dating.

60 Hiltz, S., & Turoff, M. (1978). *The network nation: Human communication via computer*. Reading, Mass: Addison-Wesley Pub. Co.; Kiesler, S., Siegel, J. & McGuire, T. W. (1984). Social psychological aspects of computer-mediated communication. *American Psychologist*, *39*(10), 1123-1134; Rheingold, H. (1993). *The virtual community: Homesteading on the electronic frontier*. Reading, Mass: Addison-Wesley Pub. Co..

to participate equally, as opposed to traditional patterns of male dominance dictated by traditional gendered courtship scripts,[61] allowing women to 'play' with gender roles.[62] Yet Susan Herring's review of the subsequent research on gender online found limited to no gains for gender equality in the early days of online chat, asynchronous communication, and the web.[63] In only one area, graphical representation, women were found to be more sexual, self-presenting in a more 'sexualized' manner compared to men in photographs they posted on the web,[64] though one could argue whether this represents true sexual subjectivity or merely strict adherence to traditional norms of beauty as 'bait' for potential male suitors thought to value female attractiveness when choosing a mate. More recently, in online dating settings, researchers have found that women who initiate contacts connect with more desirable partners than those who wait to be contacted, yet women are still four times less likely to send messages than men.[65] Some mobile dating apps like Bumble 'put women in the driver's seat' by forcing them to initiate contact with a man first, purporting to be more 'feminist' via this approach. Yet, researchers have found that even on Bumble, traditional gendered scripts are still present.[66] The presentation of self on these apps also tends to skew conservative, with younger daters making some progressive headway compared to older: A study across seven countries found more facial prominence among young women online daters (focusing more on face than body, a reversal of previous trends), while older men showed more facial prominence than older women (over 40), suggesting that older online women daters may be adhering to more traditional gendered presentations of self, compared to younger women.[67] The perceived 'impersonality' of online dating has led to resurgence of traditional matchmakers in recent years, where men and women tend to play out traditional gender roles in courtship and dating.[68]

More young people than ever are now socializing via internet-enabled mobile devices, with most teens saying they are online 'almost constantly'.[69] The removal of embodied face-to-face interactions on online dating sites and apps, combined with the enhanced ability to 'tune',

61   Graddol, D., & Swann, J. (1989). *Gender voices*. Oxford, UK: Basil Blackwell.

62   Danet, B. (1998). Text as mask: Gender, play, and performance on the Internet. In S. G. Jones (Ed.), *New media cultures, Vol. 2. Cybersociety 2.0: Revisiting computer-mediated communication and community* (pp. 129-158). Thousand Oaks, CA, US: Sage Publications, Inc..

63   Herring, S. C. (2001). Computer-mediated discourse. In D. Tannen, D. Schiffrin, & H. Hamilton (Eds.), *Handbook of Discourse Analysis* (pp. 612-634). Oxford: Blackwell.

64   Blair, K., & Takayoshi, P. (1999). *Feminist cyberscapes: Mapping gendered academic spaces*. Santa Barbara, CA: Greenwood Publishing Group.

65   Knudson, S. (2017). A good match? Offline matchmaking services and implications for gender relations. *Marriage & Family Review*, *53*(7), 641-666. doi:10.1080/01494929.2016.1247764.

66   Bivens, R., & Hoque, A. S. (2018). Programming sex, gender, and sexuality: Infrastructural failures in the "feminist" dating app Bumble. *Canadian Journal of Communication*, *43*(3), 441-459. doi:10.22230/cjc.2018v43n3a3375.

67   Prieler, M., & Kohlbacher, F. (2017). Face-ism from an international perspective: Gendered self-presentation in online dating sites across seven countries. *Sex Roles*, *77*(9-10), 604-614. doi:10.1007/s11199-017-0745-z.

68   Knudson, A good match?.

69   Pew Research Center. (2018, May 29). 45% of teens say they're online almost constantly. Retrieved from https://www.pewinternet.org/2018/05/31/teens-social-media-technology-2018/pi_2018-05-31_teenstech_0-05/.

photoshop or 'filter' photos has led to an escalation in various unreal and even fantastical presentations of self which may bear no resemblance to their actual offline selves, a process referred to as the 'virtual mirror'.[70] According to deindividuation theory, anonymity increases people's propensity to engage in these kinds of anti-normative behaviors, due to decreased self-evaluation and the perception of diminished social approbation.[71] The internet fosters deindividuation via the anonymity of social interactions, which also encourages people to act out or self-disclose more readily than they would face to face,[72] while also engaging in other behaviors more quickly, such as sexual talk or exchanging sexual photos, exploring sexual fantasies, or initiating relationships for romantic or purely sexual ends.[73] Yet such behaviors may not be practiced equally among men and women: Clear gender differences have been found in the effects of deindividuation, with some studies reporting greater anti-normative behavior in males than females, and others finding anti-normative behavior only in all—male groups,[74] while young females have been found to be more reticent to sexually self-disclose compared to males online.[75] There are some advantages to the relative anonymity of online communications: Individuals who are shy or anxious may felt less inhibited online, allowing them to gain 'practice' approaching others, and these social gains may be translated to face to face settings, leading to a decrease in offline shyness.[76] Similarly, women who are inhibited from approaching a man to express attraction offline may be more likely to 'try out' more sexually assertive behaviors online, which may then translate to a change in offline flirting behaviors. Given that the internet may free women from traditional gender norm strictures in courtship and flirting, our main research question is: Are women 'singing the Siren's song' online? In other words, are they taking advantage of the internet to explore more progressive sexual scripts online, by initiating romantic relationships and communicating their attraction through flirting in a more active, assertive way? Or are traditional gendered courtship scripts simply being reproduced in the online venue? As studies from the last decade found that sex roles and norms still prevailed, this paper attempts to see whether really nothing is new in the western front when it comes to siren roles. This question will be answered via an exploratory analysis of gendered courtship and sexual scripts of those who use online matchmaking sites to shed light on these questions.

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75   Chiou, W. (2007). Adolescents reply intent for sexual disclosure in cyberspace: Gender differences and effects of anonymity and topic intimacy. *CyberPsychology & Behavior, 10*(5), 725-728. doi:10.1089/cpb.2007.9961.
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Method

PARTICIPANTS AND DEMOGRAPHICS

The quantitative data for this study was collected using an online survey hosted at a large internet matchmaking site's research website, for which the first author was a design collaborator and the second author was principle investigator and implemented the survey. Participants were recruited through a monthly newsletter distributed to registrants for the online singles matching service for two months, and through key-word ads placed though online search providers. Data was cleaned of participants who responded multiple times based on IP tracking, or provided out-of-range values for age, number of previous marriages, number of children, etc. The data retained for analyses included responses from 5,203 participants, with complete data from 2,546 respondents. Of these, 40% were registered users on the matchmaking site, while the majority (60%) were non-users but had used other online dating sites. Table 1 contains detailed information on the characteristics of the sample. Of those who completed the survey, 69% were female (1,759) and 31% were male (787). The mean age of respondents was 37. The mean age for males was slightly lower (35) than females (37).

		Count	Column %
Gender	Female	1759	69.1%
	Male	787	30.9%
Age Groups	Under 20	54	2.2%
	20 to 29	743	29.6%
	30 to 39	738	29.4%
	40 to 49	560	22.3%
	50 to 59	347	13.8%
	60 and over	66	2.6%
Marital Status	Single, never married	1453	57.1%
	Married	89	3.5%
	Separated	58	2.3%
	Divorced	871	34.2%
	Widowed	73	2.9%
Relationship Status	Not in a romantic relationship	1816	74.0%
	Casually dating 2 or more people	190	7.7%
	Casually dating 1 person (not committed)	258	10.5%
	Serious dating (one person with goal of a long-term relationship)	88	3.6%
	Committed dating (committed to a long-term relationship with)	48	2.0%
	Engaged to marry	6	0.2%
	Other	49	2.0%
Romantic partners in last 12 months	0	485	19.1%
	1	769	30.2%
	2	493	19.4%
	3	303	11.9%
	4	156	6.1%
	5	126	5.0%
	6	74	2.9%
	7	35	1.4%
	8	28	1.1%
	9	6	0.2%
	10	26	1.0%
	More than 10	44	1.7%
Education	Doctorate	113	4.4%
	Masters	462	18.2%
	Bachelors	832	32.8%
	Associates	272	10.7%
	Some College	654	25.7%
	High School	188	7.4%
	Did Not Complete High School	19	0.7%
Household Income	$0	44	1.7%
	Less than $20,000	253	10.1%
	$20,000 to $40,000	703	27.9%
	$40,000 to $60,000	692	27.5%
	$60,000 to $125,000	647	25.7%
	$125,000 to $250,000	146	5.8%
	More than $250,000	31	1.2%
Race	White, non-Hispanic	2042	80.4%
	Hispanic or Latino	124	4.9%
	African-American	174	6.9%
	Asian/Pacific Islander	57	2.2%
	Korean	15	0.6%
	Japanese	4	0.2%
	Chinese	30	1.2%
	Indian	18	0.7%
	Arab	3	0.1%
	Native American	17	0.7%
	Other	55	2.2%

Table 1: Sample characteristics.

A large majority of the sample (71%) was not currently in a relationship. Over half (57%) had never been married, with the remainder being predominantly divorced (34%). As one would expect from the age difference, females were significantly more likely than males ($p < .01$) to have been previously married (39% versus 24%, respectively).

MEASURES

General. For the quantitative data, measures used for the current study consisted of a battery of demographic and behavior questions related to relationships and flirting that were presented before batteries assessing flirting style, personality type, attitudes towards deception and social monitoring.

Flirting Styles. A 24-item measure of the five flirting styles was taken from previous research conducted by Hall, Carter, Cody and Albright.[77] Individual flirting style scales consisted of between 4 and 6 items requiring an agreement rating by respondents on a seven-point Likert-type scale. The 'Playful Style' (observed alpha = .734) is typified by statements such as 'The primary reason I flirt is because it makes me feel good about myself' and 'I flirt with people I have absolutely no interest in'. The 'Physical Style' (observed alpha = .865) is typified by statements such as 'I am good at picking up on the sexual interest of others' and 'I am good at using body language to flirt'. The 'Sincere Style' (observed alpha = .714) is typified by statements such as 'I really enjoy learning about another person's interests' and 'I really look for an emotional connection with someone I'm interested in'. The 'Inhibited Style' (observed alpha = .688) is typified by statements such as 'There are rules about how men and women should conduct themselves on dates' and 'In today's society people have to be careful about flirting'. Most of the items used for the current analysis were drawn from the 'Traditional Style' (observed alpha = .851), which focused on traditional gendered courtship scripts. Items used in this analysis were: 'Men should pursue women, not the other way around'; 'Men should make the first move'; 'A confident woman is a good thing in a flirting situation'; 'The man should be in control of initiating the relationship'; 'I prefer to take charge of a flirting situation'; 'Just because a female is passive, doesn't mean she isn't interested'; 'It doesn't matter who makes the first move, as long as it happens'; 'There is such a thing as being too forward'; 'Its romantic when a man brings gifts such as flowers or candy'; and finally, 'Men should open doors and pick up the check on a date'. Tables 2, 3 and 4 contain more exhaustive lists of these measures.

The data were analyzed broken down by sex and age categories by decade (Under 20, 20s, 30s, 40s, 50s and 60+) in order to explore sex or cohort differences in attitudes or beliefs about gendered courtship scripts.

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77   Hall et al., Individual differences in the communication of romantic interest.

Results

Most of both women (86%) and men (87%) said they were interested in finding a new romantic partner. When asked about their success in flirting with the last person they flirted with, women reported significantly more success than men (30% 'very successful' versus 19%, respectively).

Noticing or Being Noticed. Women were significantly and notably more likely than men to say they 'always' or 'often' notice people's flirting cues, while those younger (under 20) and those over 60 were most likely to say they typically notice other's cues. Men and women were equally likely to say they've been in situations where someone thought they were flirting but they weren't, or that someone mistook their friendliness for flirtation. Men reported more difficulty than women in communicating their sexual interest, noticing the cues of others, and getting noticed: Men were significantly more likely to say they thought they were flirting, and the other person didn't pick up on it. By age, both men and women under 30 had the most trouble getting their flirting signals across effectively, followed by those 30 - 39. Women were more likely than men to say they flirt because it makes them feel more attractive (13% of women 'strongly agree' vs. 8% of men). The results of noticing and being noticed are displayed in Table 2.

		Overall	< 20	20 to 29	30 to 39	40 to 49	50 to 59	60+	$\chi2$	Sig.	n
I notice flirting cues											
	Male	5.8	15.4	5.7	4.2	7.5	3.1	13.6	32.74	*	908
	Female	9.3	14.6	8.0	8.8	9.4	10.7	11.5	37.25	**	2021
Someone thinks I'm flirting when I'm not											
	Male	2.6	12.8	3.4	1.7	0.6	2.1	0.0	39.92	***	908
	Female	2.7	14.6	4.1	2.0	1.6	2.2	1.9	70.11	***	2021
I have difficulty expressing sexual interest											
	Male	11.3	18.4	14.9	10.0	8.8	4.2	0.0	46.40	***	903
	Female	7.5	12.5	9.2	8.4	5.3	6.1	5.9	17.55	ns	2015
My flirting isn't noticed											
	Male	5.6	12.2	4.4	4.4	2.6	1.4	3.9	58.77	***	908
	Female	3.8	17.9	7.1	4.2	3.1	1.0	0.0	63.96	***	2024
I flirt to feel more attractive											
	Male	8.3	16.7	7.9	8.5	8.4	5.3	13.6	22.19	ns	874
	Female	13.2	29.7	14.5	13.1	11.6	11.2	8.3	59.10	***	1932

*** = p > .001 ** = p > .01 * = p > .05

Table 2: Noticing or being noticed, percent responding as 'always'.

Traditional Gender Scripts. Both men and women seemed to advocate conservative approach to courtship, with women tending to be more traditional minded than men. Overall, 25% of both men and women agreed, and women were significantly and notably more likely to agree to strongly agree that the man should be in control of initiating the relationship; Women under 30 were most likely to strongly agree, while none of the men over 60 strongly agreed with this statement. Men were more likely than women to say they prefer to take charge of a flirting situation, particularly when they are interested in someone. Yet men were twice as likely to 'agree' and three times as likely to 'strongly agree' that 'women assertively pursuing a man is fine with me' compared to women. Overall, those under 30 were most likely to agree, and

those over 60 most likely to disagree. Women were significantly and notably more likely to say they wish we could go back to a time when formal dating was the norm and agreed more than men that 'just because a female is passive, doesn't mean she isn't interested'. Women under 30 were the most likely group to agree with this statement about female passivity. Among the men, those under 20 and over 60 were most likely to agree that female passivity doesn't mean disinterest. Women were less likely than men to agree that confident women are a good thing in flirting situations. Men were more likely to agree or strongly agree that it doesn't matter who makes the first move, as long as it happens, while women were much more likely to agree that men should make the first move, and that 'men should pursue women, and not the other way around'. Women were also more likely to strongly agree that there is such a thing as being too forward, though men were more likely to agree or somewhat agree. In terms of traditional gendered courtship behaviors, women were twice as likely to strongly agree that its romantic when a man brings gifts such as flowers or candy, and more strongly agreed that men should open doors and pick up the check on a date.

Chi-square analyses (see Table 3) revealed no significant differences between *matching site* and *non-matching site* users on the 'traditional' gendered courtship script variables above.

		Overall	< 20	20 to 29	30 to 39	40 to 49	50 to 59	60 +	X2	Sig.	n
Men should make the first move											
	Male	2.7	11.5	3.8	2.3	0.8	1.1	0.0	46.22	*	21
	Female	15.8	14.8	20.7	18.3	13.1	6.6	11.1	58.66	***	273
It is up to the man to take control in initiating relationships											
	Male	5.9	10.3	6.2	9.5	2.7	2.1	0.0	42.74	ns	49
	Female	13.8	21.9	20.0	12.3	12.1	7.6	13.0	76.21	***	253
Women assertively pursuing is fine											
	Male	35.7	37.9	34.2	41.6	40.8	41.5	60.0	39.77	ns	319
	Female	8.9	15.2	9.5	10.3	7.0	8.0	4.3	53.52	**	163
Wish we could go back to formal dating											
	Male	4.4	19.2	6.2	3.3	0.0	3.3	0.0	66.73	***	33
	Female	8.5	11.1	12.3	9.1	6.7	2.7	2.2	79.43	***	144
Just because a female is passive doesn't mean she's not interested											
	Male	6.6	11.5	5.2	7.5	8.3	4.4	9.5	24.81	ns	51
	Female	27.6	40.7	31.0	28.1	25.8	22.2	24.4	51.53	**	479
Men should pursue women											
	Male	1.8	3.8	2.8	0.9	0.0	3.3	0.0	34.60	ns	14
	Female	14.1	14.8	19.7	15.6	11.0	7.0	8.9	49.10	*	245
Men should open doors and pick up the check on a date											
	Male	19.2	40.7	27.7	25.6	20.7	21.7	22.7	50.91	**	143
	Female	24.5	40.7	27.7	25.6	20.7	21.7	22.7	33.16	ns	426
Confident women are a good thing in flirting situations											
	Male	17.3	19.2	22.1	14.0	14.3	16.5	9.5	21.99	ns	349
	Female	15.7	22.2	15.6	15.6	14.0	16.8	11.1	18.42	ns	271
It is romantic when a man gives a woman gifts like flowers or candy											
	Male	16.4	34.6	16.7	13.6	20.3	12.2	9.5	40.23	ns	126
	Female	32.4	44.4	31.1	31.3	34.6	32.7	25.0	55.30	**	561

*** = p < .001 ** = p < .01 * = p < .05

Table 3: Traditional gender scripts, percent responding as 'strongly agree'.

Communicating sexual interest. Women, particularly those under 30, were notably more likely than men to agree they are good at using body language to flirt. There were no significant differences between men and women in agreement about whether a woman should be somewhat sexually inhibited. Women over 30 were most likely to strongly disagree that a woman should be somewhat sexually inhibited, while those under 30 were most likely to strongly agree. Men under 20 were most likely to strongly agree that a woman should be somewhat sexually inhibited, followed by men 50 - 59. More women than men agreed or strongly agreed they use sexual humor to flirt, though more men somewhat agreed they do; young women (under 20) and young men (under 39) were most likely to strongly agree they use sexual humor. More men than women agreed or strongly agreed they are comfortable flirting in a sexual way, yet women are more likely to agree to strongly agree that they are likely to pick up on the sexual interest of others. Women also are more likely to somewhat to strongly agree they are good at showing their sexual interest compared to men and are good at using body language to do so. Yet women were significantly and notably more likely than males to say that someone being too physically forward is a turnoff. Women were significantly and notably more likely to say that people should be cautious when letting someone know they are interested, and more strongly agreed it is important not to say anything overtly sexual when showing interest. Rather than using overt sexuality, women more strongly agreed that indirect methods of communicating interest are effective, such as a gentle touch on the arm, with older women most likely to agree, as well as men under 20. Younger men and women (under 29) were both most likely to agree that casually bumping or touching someone is a good way to communicate interest. Notably, none of the men over 60 agreed this was a good approach. The results are summarized in Table 4.

	Overall	< 20	20 to 29	30 to 39	40 to 49	50 to 59	60 +	χ2	Sig.	n
A woman should be somewhat sexually inhibited										
Male	3.30	10.30	2.90	2.30	3.40	5.30	0.00	74.71	***	27
Female	3.30	9.10	4.60	2.20	3.30	1.50	4.30	87.56	***	56
I'm good at using sexual humor to flirt										
Male	5.50	17.20	7.50	3.20	2.70	4.30	9.50	38.15	ns	45
Female	6.40	21.20	6.20	6.20	6.60	5.30	0.00	49.20	*	115
It is important not to say something overtly sexual when showing interest										
Male	14.10	23.10	14.20	9.30	15.00	14.30	23.80	36.41	ns	105
Female	19.20	14.80	18.60	17.60	19.00	24.00	17.80	29.70	ns	333
I'm comfortable flirting in a sexual way										
Male	9.60	27.60	10.70	6.30	8.80	7.40	9.50	49.59	**	77
Female	9.60	18.20	4.60	6.50	6.00	5.70	6.50	38.11	ns	109
I'm good at picking up the sexual interest of others										
Male	4.30	6.90	4.90	3.20	6.10	2.10	0.00	30.90	ns	35
Female	6.40	12.10	6.20	4.90	6.00	8.80	8.70	33.10	ns	115
People be cautious when letting someone know they are interested										
Male	4.10	3.80	6.30	1.90	3.80	3.30	0.00	38.49	ns	31
Female	6.10	17.90	7.20	2.50	6.30	7.80	15.60	56.12	**	105
Sometimes a gentle touch on the arm is enough to show you are interested										
Male	10.40	23.10	10.10	8.50	9.00	11.00	9.50	27.39	ns	77
Female	18.10	21.40	15.40	15.30	18.60	25.30	28.90	67.44	***	314
Casually touching or bumping into someone is a good way to get attention										
Male	6.50	21.20	12.80	10.70	9.20	8.40	4.30	60.22	***	194
Female	10.70	20.70	7.80	4.10	5.50	4.30	0.00	38.74	ns	51
I always let the opposite sex know when I'm sexually interested in them										
Male	2.80	6.90	3.90	0.90	2.70	3.20	0.00	53.41	**	23
Female	2.90	9.10	2.70	2.00	2.60	4.20	2.20	34.81	ns	51
I'm good at showing my sexual interest										
Male	35.00	3.40	5.60	2.70	4.80	3.20	4.80	23.42	ns	4.3
Female	5.50	15.20	4.00	5.10	6.40	5.40	4.30	44.88	*	97
It is fun to dance seductively										
Male	15.50	23.10	16.90	12.20	12.80	18.70	9.50	38.10	ns	117
Female	10.70	25.90	13.30	9.90	7.90	10.10	8.90	52.96	**	184
I am good at using body language to flirt										
Male	4.20	10.30	4.60	2.30	3.40	6.40	0.00	24.53	ns	33
Female	7.50	27.30	8.10	6.40	6.60	7.60	4.30	60.65	**	135

*** = p < .001 ** = p < .01 * = p < .05

Table 4: Communicating sex interest, percent responding as 'strongly agree'.

Discussion

Overall, the findings suggest that for some women, the internet seems to be facilitating a change in gendered courtship scripts, moving women from the position of being the sexual and relationship 'gatekeepers', to allowing them more overt power, putting them 'in the driver's seat' in courtship and relationship initiation. Older women may be freed from the constrictions of ageism and the constraints of physicality in face to face meetings.

For most of the women, however, even the internet's 'freeing' ability to remove the immediate social sanctions possible in face-to-face interactions has not left them 'singing the Siren's Song'. On the contrary – many women, particularly younger women under 30 (and many men as well) – indicated a desire to return to more traditional dating times where men make

the first relational and courtship moves, men 'take charge' of flirting and courtship situations, and men bring women traditional courtship tokens such as flowers or candy, open doors, and pick up the check on dates. Women advocated caution in expressing interest and not saying anything overtly sexual, even going so far as to disagree that a confident woman is a good thing in flirting situations, instead advocating a more passive, indirect approach to flirting - namely, an 'accidental' bump or a casual touch on the arm to communicate interest. More females than males also agreed that female passivity does not indicate disinterest. Taken as a whole, these findings seem to suggest that the internet is not freeing women from traditional gendered courtship script stricture, which continue to prevail (even among young women) as they did in the past.[78]

Regarding the limitations of our study, though the sample constituted a wide variety of ages and was based on two national samples, it still may not have fully represented women's experiences with sexuality and courtship scripts offline. There may be a self-selection bias in the sample, since people who took the survey responded to the call for participants on matching site labs.com, although no significant differences were found between those who were registered matching site users and those who were not in terms of conservatism. Those in these samples have a higher average level of education compared to the general U.S. population, a fact that relates to a willingness to experiment with sexuality. Also, those with experiences at the poles - either very good or very bad - may have responded to the survey.

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78   Seal & Ehrhardt, Masculinity and urban men; Wiederman, The gendered nature of sexual scripts.

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3: GENDER DIFFERENCES IN ONLINE DATING EXPERIENCES

MILENA R. LOPES AND CARL VOGEL

Online dating applications have emerged in the mobile device industry as a powerful tool to connect people and facilitate relationship formation or casual dates. Tinder is one of these applications, and forms part of a trend among young people, who tend to engage with new technologies and intensively interact with each other in virtual environments. There are some benefits associated with the use of such applications. Compared to offline courtship, using applications may save time, provide a greater level of privacy, anonymity, and safety (within a virtual environment), and allow the user to engage with many users simultaneously.

The advance of hookup culture is intrinsically connected to the rise of online dating. A hookup is defined as a casual sexual interaction (which can include intercourse or not) without the exclusivity and commitment of a romantic relationship.[1] In this context of hookup culture, studies have revealed that women have a lower sexual desire and sexual attitudes in comparison to men[2] and that men are more likely to benefit from hookups,[3] probably due to gender differences in social stigma associated with casual sex.[4] A different study, however, attributed the willingness to engage in sexual activity to personality traits rather than gender.[5] Armstrong, England, and Fogarty[6] suggested that gender inequality affects sexual enjoyment in hookups for women and argued that a lack of concern with women's pleasure in casual sex was reported by both men and women. Those differences over the willingness to engage in hookups as well as enjoyment during encounters highlight the importance of considering both men's and women's needs in the design of the experience of online dating applications. The experience designed for an application is most readily tangible to users in the interface, which functions partly as an interface for the user to the application itself, and partly as an interface to other users.

1   Armstrong, E. A., England, P., & Fogarty, A. C. K. (2010). Orgasm in college hookups and relationships. In B. Risman (Ed.), *Families as they really are* (pp. 362–377). W.W. Norton; Bogle, K. A. (2008). *Hooking up: Sex, dating, and relationships on campus*. NYU Press; Wade, L. (2017). *American hookup: The new culture of sex on campus*. WW Norton & Company.
2   Petersen, J. L., & Hyde, J. S. (2010). A meta-analytic review of research on gender differences in sexuality, 1993-2007. *Psychological Bulletin*, *136*(1), 21-38. doi:10.1037/a0017504.
3   Bogle, Hooking up.
4   Allison, R., & Risman, B. (2013). A double standard for "hooking up": How far have we come toward gender equality? *Social Science Research, 42*, 1191-1206. doi:10.1016/j.ssresearch.2013.04.006.
5   Vrangalova, Z., & Ong, A. D. (2014). Who benefits from casual sex? The moderating role of sociosexuality. *Social Psychological and Personality Science*, *5*(8), 883-891. doi:10.1177/1948550614537308.
6   Armstrong, E. A., England, P., & Fogarty, A. C. K. (2012). Accounting for women's orgasm and sexual enjoyment in college hookups and relationships. *American Sociological Review, 77*(3), 435-462. doi:10.1177/0003122412445802.

Our past work attempted to assess users' experience of Tinder. Data collected from female users of Tinder revealed that a great number of women felt frustrated (43%) and disrespected (35%) after using Tinder and reported experiencing some kind of offensive behavior towards them (70%), as a direct sexual approach and sexist remarks.[7] Moreover, 85% of respondents said they believed that the developer was a man and 60% believed that men and women usually have different motivations to use Tinder.[8] These numbers indicate that there is a perception of gender dimension linked to the personal experience of using Tinder.

However, these findings are not indicative of a gender difference in response to Tinder itself, since it is restricted to the perception by female users only. In the study reported here we expand the perspective to male users (through a fresh recruitment of participants including both males and females) and examine their reflections on Tinder in the attempt to map gender differences. In order to assess women's and men's experiences, we rely on the graphical user interface (*GUI*) as the main channel of communication though mobile application, which highlights the design of the interaction through visual outputs. Thus, we analyze the user experience by assessing their impression of the *GUI* and their impression of another users' behavior.

The objective of this study is to determine whether there is a genuine difference between female and male user's experience and perception with regards to the motivations to use the application, to the perception of the interface, to the perception of the benefits and downsides of the application, to their reflection on well-being (feeling respected), to their perception of gender differences, and to the acceptance and adoption of the application. We detail the research methods and exact questions tested and report results noting where gender differences were statistically significant. Following discussion of these results, we conclude with an indication of next steps. We emphasize that we have no personal or corporate connections to Tinder; this research is not funded by that company nor by any of its competitors. Additionally, the study we report here and our prior work that we cite were approved by the Research Ethics Committee of the School of Computer Science and Statistics of Trinity College Dublin, the University of Dublin.

Earlier Explorations

Recently, we carried out a study to explore the perceptions women hold about online dating applications.[9] Tinder was selected for that pilot investigation due to its popularity. Tinder makes it easier to connect people, initially in a virtual space. Based on Tinder's reports,[10] the application is in use in more than 190 countries and makes possible one million dates per week. According to the company, the application is focused on bringing people together and promoting connections that would not be possible without the benefit of interaction in

7   Lopes, M. R., & Vogel, C. (2017b). Women's perspective on using Tinder: A user study of gender dynamics in a mobile device application. In *Proceedings of the 35th ACM International Conference on the Design of Communication* (p. 12). ACM. doi:10.1145/3121113.3121220.

8   Lopes & Vogel, Women's perspective on using Tinder.

9   Lopes & Vogel, Women's perspective on using Tinder.

10   *Tinder's report*. (2018, October). Retrieved 9th October 2018, from https://www.gotinder.com/press.

the virtual realm.

The original study employed a non-probability convenience sample (N=40) of Brazilian female Tinder users and adopted a mixed methods approach incorporating both qualitative and quantitative data analysis. The qualitative analysis made it possible to understand female users' motivations, expectations and experience through the application, and the posterior quantitative analysis allowed us to judge whether the application considered their needs and provided them with a good experience. The study[11] revealed that 70% of the respondents experienced offensive behavior during dialogues with male users and that more than 50% uninstalled the application after facing a frustrating experience. Participants characterized their experiences in abstract terms, without necessarily providing examples of episodes that underpin their descriptions. Concepts like 'frustration' that emerge from users are not possible in the data collected to disambiguate between, for example, frustration with the interface and the software interactions it requires and frustration with the types of interactions with other users that were experienced through the software. Furthermore, the women, tended to look for friendship and/or a relationship and met these aims using the application. However, the majority also reported that they eventually uninstalled the application due to a negative overall experience. These figures, while taken cautiously due to the small sample size, arguably indicate that Tinder, the most popular dating application, disregards women's needs and expectations. The findings show that female users are quite likely to face a frustrating experience, even when they get what they want from the application. In other words, the application may meet their expectations regarding the motivation to use it but at a high cost: the large number of reported offensive behaviors (such as unwanted direct sexual approaches and sexist remarks) indicates a sensitive gender dynamic and the presence of sexist behavior among users of the application. The subjective analysis reveals that women used Tinder in the absence or unawareness of better online alternatives for dating.

Our initial study highlights three facts that are important to the development of a wider research plan to investigate gender bias in the interactions enabled by dating applications. First, the high percentage of reported allegedly sexist behavior indicates the possible presence of harmful dynamics among the service users, although the causes are not yet clear. Second, the high percentage of women who believe that the developer is a man sheds light on gender effects in the perception of design – if female users believe the application to be designed by men, they may be inclined to feel it is designed for men, more than for women, and therefore it is interesting to know if both male and female users have the same perception about the design. Third, the rate of overall dissatisfaction reported by women points to a problem regarding the design of the application that can be related to gender biases during the planning stages of the design of the online dating experience. The last two facts are very likely to be caused by gender biases in design, and, the first, although not clear, could be either a consequence of design or worsened by design. It is safe to assume

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11 Lopes, M. R., & Vogel, C. (2017a). Gender bias on Tinder: Transforming an exploratory qualitative survey into statistical data for contextualized interpretation. In A. Costa, L. Reis, F. Souza, & A. Moreira (Eds.), *Computer supported qualitative research* Vol. 71 (pp. 225-236). Springer. doi:10.1007/978-3-319-61121-1_20.

that sexist behaviors exist independently of Tinder and to realize that women interacting with men outside this computer application also have negative (and positive) experiences. However, in presenting Tinder as an application that makes establishing relationships easier, one might imagine that its developers considered that it could provide an environment in which negative experiences are minimized, relative to the alternative of not using such an application. One might imagine that its design attended to the perspective of both males and females in its formulation. We emphasize the design of the application as the visual product of a communication project that is developed to attend user's needs and expectations and within which the *GUI* highlights the outcomes of that project. The aesthetics of interactive system carries instructions of how to use it[12] and, consequently, is embedded with the designer beliefs and perspectives of the system.[13]

However, that initial study left open the possibility that men have the same perception women have of the dynamics in online dating applications and may also be largely dissatisfied with their experience on Tinder. Therefore, we repeat the study with subjects from both genders in order to examine differences of motivation, expectations, and perceived experience and to gather evidence that can indicate whether the application appears to prioritize the needs of one gender more than the other.

Method

In order to identify whether significant gender differences in the perception of the experience of Tinder exist, we repeated the same survey we conducted in 2016 with women, but now with both men and women. The method is identical to the one used in the previous study.[14] Specifically, we conducted the survey online (the questions are listed below), using *Qualtrics*, and asked the same questions that were asked in the previous survey. As in the previous study, participants were recruited through online social media. The survey was presented in the format of a structured interview. Even though the interview consisted mainly of open-ended questions, which facilitate the elicitation of different perspectives.[15] These responses were then coded as described below. We also handled the coded data quantitatively using a mixed method approach,[16] essentially analyzing contingency tables according to gender and response categories.

12   Petersen, M. G., Iversen, O. S., Krogh, P. G., & Ludvigsen, M. (2004). Aesthetic interaction: A pragmatist's aesthetics of interactive systems. In *5th conference on designing interactive systems: processes, practices, methods, and techniques* (dis '04). doi:10.1145/1013115.1013153; Bannon, L. J., & Bødker, S. (1989). Beyond the interface: Encountering artifacts in use. *DAIMI Report Series, 18*(288). doi:10.7146/dpb.v18i288.6666.

13   Winograd, T. (1986). A language/action perspective on the design of cooperative work. In *Proceedings of the 1986 ACM conference on computer-supported cooperative work* (pp. 203-220). doi:10.1207/s15327051hci0301_2.

14   Lopes & Vogel, Women's perspective on using Tinder.

15   Patton, M. Q. (2002). *Qualitative research and evaluation methods*. SAGE.

16   Creswell, J. (2014). *Research design: Qualitative, quantitative, and mixed methods approach*. SAGE.

RECRUITMENT AND PARTICIPANTS

Recruitment was conducted through social media. We took advantage of our personal relationships to distribute the survey. The call for participation was posted in one of the researchers' Facebook and Whatsapp groups with a brief explanation of the study and the link to *Qualtrics*. Volunteers found the information for participants and the consent to participate in the first page of the survey. In total, 61 participants completed the interview. Of these, we analyzed the data of 29 males and 25 females. Men looking exclusively for men (1 participant) and women looking exclusively for women (7 participants in total) were excluded from the analysis, since we were unable to run tests that analyze whether homosexuality as factor revealed a different gender impact, given the usual assumptions for minimum numbers of expected values (i.e., 5) in each cell of resulting contingency tables. As we analyzed the perception of gender and gender dynamic within the communication through online applications, we focused primarily on heterosexual individuals since heterosexual connections serve as a starting point to understanding gendered expressions in the dating realm and biases in design. All the participants were Brazilian except for 7 males who came from European countries. All in all, the sample is qualified as a non-probability convenience sample composed of 54 heterosexual participants aged 20 to 52 years old who used Tinder at least once to meet possible partners.[17] Although our findings cannot be extended to the whole population of Tinder's users (not least because we do not here report on the data of users seeking same sex matches), it reveals several differences that give a picture of the gender dimension of dating applications.

STRUCTURED INTERVIEW

The structured interview is used in this research because we wanted to learn about the users' experience and to obtain spontaneous answers. To avoid potential bias, we did not reveal the purpose of the study to the participants until they finished the interview which had both English and Portuguese versions. It was composed of 16 questions, plus several more concerning personal information (gender, age, sexual preference and nationality). Below, we provide the questions in English, and add a brief explanation for each. Open-ended questions were incorporated in the hope to that participants would expand on their thoughts. This included adopting questions that we felt open to interpretation as well as creating possibilities for open responses (we hoped that responses would in those cases reveal interpretations of the questions).

Question 1 - 'Why did you install the application? What were you looking for and what were your expectations?' This question was posed to understand the motivations for using Tinder.

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17   Sauro and Lewis (2012) argue that there is a misconception that sample sizes should be large in order to interpret it quantitatively and that in users research even a sample of 10 participants can be quantitatively interpreted. While we do not take the present study to be the end of the story in relation to the research questions that we address, we think that the small sample supports initial answers to the questions.

Question 2 - 'Did you have to ponder before installing Tinder? Why?' We wanted to know if there was any preconceived idea about Tinder related to concerns or fears that could discourage installation.

Question 3 - 'What was your first impression when you started using the app?' With this question we wanted to find out what users felt about the application, before they had a complete experience of it. First impressions can reveal how the graphical user interface meets users' expectations.

Question 4 - 'How did you feel about your first matches?' In this question we invite users to recall the feeling they had when they first matched with someone using the application.

Question 5 - 'How did you feel about the application's approach and the match-based interaction?' This question aims to reveal what users thought about the interaction and the interface.

Question 6 - 'What are the positive aspects of your experience? Tell me about some remarkable situations.' From this question we hope to learn about the perception of a 'good' experience.

Question 7 - 'What are the negative aspects of your experience? Did anything unpleasant happen? Tell me about these situations.' This is a key question that could reveal harmful dynamics in using Tinder.

Question 8 - 'Did you feel respected during your experience on Tinder?' Through this question we wanted to investigate whether Tinder creates a space for inconvenient patterns of interaction (including sexism).

Question 9 - 'For how long have you been using or have used the application?' The duration of usage may indicate satisfaction or dissatisfaction.

Question 10 - 'Have you uninstalled Tinder?' We wanted to measure users' fidelity to the application as it can also indicate dissatisfaction at a high extent.

Question 11 - 'If you have stopped using the application, what is the reason?' This is one of the key questions of the interview through which we aimed to understand the reasons for dropout.

Question 12 - 'Do you think the developer was a man or a woman?' This question could reveal the perception of a gender dimension in the design of the application by users.

Question 13 - 'Do you see any difference between what men and women look for on Tinder? What do they look for, in general?' We ask about the perception of gender difference in relation to the motivation to use Tinder in order to help understand how users' perceptions interact with their own aims.

Question 14 - 'Do you have friends that are using / have used the application? What is their opinion, in general?' The idea of this question is to obtain insight into the users' peers with regards to Tinder.

Question 15 - 'How could your experience on Tinder be more pleasant?' This question provides an opportunity to point out the improvements they would like to see in the interface so they would have a better experience. It can also reveal some of the problems regarding the interface, including those related to gender dynamics.

Question 16 - 'Apart from Tinder, have you used other dating applications? Which app do you prefer?' This question is asked to place Tinder in the larger context of dating apps.

Question 14 was not analyzed quantitatively (neither in the first study nor in this one) due the nature of the question, which is beyond the scope of this paper. The text of the question is included for completeness of description.

DATA ORGANIZATION

The data resulting from this mixed gender survey was subjected to both quantitative and qualitative analysis. The first stage of this process was to analyze each sentence of participants' responses, take notes and summarize their comments in keywords. This process entails careful and repeated reading of participants' responses. For example, one user responded to the first question (motivations for installation) writing 'I was looking for dates. I didn't really have expectations. I was looking for casual'. The first sentence still created doubts as to what sort of relationship he was looking for, but the last phrase reveals that he was looking for casual dates. We posited 'hookup' as a keyword in this case. Another respondent expressed, 'to meet new people, go on a few dates and see how it goes'. From this answer we understand that she was primarily interested in getting to know new people (and, consequently, extending her social circle) and in casual dates. Thus, we categorized this answer using two keywords: 'people' and 'hookup'. Sometimes, the respondents provided relevant answers not in the space predefined for the question but in a different place in the survey. For example, when asked about the negative aspects of the application, some participants responded 'none' or pointed to a specific concern, but by analyzing the whole interview it was possible to identify different complaints about the application made in response to the first question (when asked about their motivations), the third question (when asked about their first impression) or the eleventh question (when asked about reason for uninstalling it). Those and other misplaced answers were distributed to items related to the topic.

To facilitate quantitative statistical analysis, we grouped keywords with respect to the theme of each question. For example, in Question 1, women pointed out six different motivations for using the application, and men seven. Four of these surfaced in both groups, but women also indicated pastime as a motivation, and men self-confidence. Thus, for that question, six categories of answers were reduced to the keywords: 'hookup', 'curiosity', 'people', 'romance', 'pastime', and 'self-confidence'. Each participant could indicate more than one reason to

install the application. The raw interview texts were examined twice in order to verify that the answers fit the proposed categories (that summarized the answers) and to certify that information was not lost in the process of reducing paragraphs to words.

Results

In Question 1 men and women were asked to state motivations for installing Tinder and recounted similar reasons (see Table 1) except for hooking up (casual dates and sex). No female users openly said they were looking for sex and four male participants declared this to be the case. In both groups, participants declared they were looking for casual dates, which means they were interested in finding a casual partner either for sex or for a short sexual interaction involving sex or not, both with no emotional ties and no commitment, which characterizes a hookup.[18] In total, 48% of male users reported they were looking for hookups (sum of results for 'sex' and 'casual') while only 24% of female users said so. That is a substantial difference between the two groups, but only approaches statistical significance ($\chi2=2.43$, df $= 1$, $P = 0.1189$). Some categories are exclusive to one group or the other. For example, 12% of female users said they were using Tinder as a pastime, while no male users provided this reason. Apart from declaring hookups as a main purpose, male users also said they were using the application to improve self-confidence, but no female users did so. None of the binary response categories yields a significant interaction with gender; exact results are reported in Table 1.

Motivations for using Tinder	Women (N=25)		Men (N=29)		Total (N=54)	
	n	%	n	%	n	%
Curiosity	4	16	5	17	9	17
Hookup	6	24	14	48	20	37
Pastime	3	12	0	0	3	6
People/Friends	14	56	17	59	31	57
Romance	11	44	9	31	20	37
Self-confidence	0	0	2	7	2	4

Table 1: Motivations for using Tinder. Note: Every participant responded to the question (N=54). The percentages in each column refer to the proportion of individuals of each gender that indicated the answer. Participants could indicate more than one answer.

Question 2 was about concerns before installing Tinder. The answers revealed no patter of gender differences. Men were slightly more confident with respect to installation: 76% had no concerns prior to installation vs. 68% of female participants. This putative interaction between gender and reported need to reflect prior to installation of the application is not statistically significant.

In response to Question 3 men and women reported almost the same categories of answers regarding their first impressions of Tinder. Only one man who expressed a neutral impression

18   Bogle, Hooking up; Wade, American hookup.

said it was addictive, and one woman said the application seemed too sexual at first sight. The majority of women (58% of the 24 participants who responded to that question) had a negative first impression (too sexual, superficial, awkward, disappointing, unfiltered), whereas the majority of men (55%) had a positive first impression (engaging, exciting, fun, great, intuitive, straightforward). The interaction between gender, and the categories of response is not statistically significant.

When asked about their feelings with respect to their first matches (Question 4), men and women showed a subtle, but not statistically significant, difference. The two groups pointed out the same categories of responses (confident, indifferent, not reciprocate, uncomfortable), but several male users also indicated feeling 'unconfident' or 'curious'. However, the categories 'not reciprocate' and 'uncomfortable' can also be considered as 'unconfident', considering that unconfident can either represent the feeling about oneself or towards the application. Most women (68%) felt confident while 24% felt unconfident. 55% of men felt confident and 31% unconfident. The interaction between gender and categorization of first matches is not statistically significant.

When asked about the design of the system (Question 5), the two genders indicated similar categories of responses (effective, inefficient, fun, ok, straight-forward, superficial), except that men also pointed out 'reciprocal', 'easy', and 'confusing', while women added 'private' and 'innovative'. Only 10% of the men and 20% of the women reported to find the system effective, however, in total, 61% of the females liked the system, 30% disliked it and none had mixed feelings. Among male users, 52% like Tinder, 41% disliked it and 7% had a mixed impression. The interaction of gender and characterization of the application is not statistically significant.

In response to Question 6 regarding the benefits of using Tinder, several gender differences come to light (see Table 2). Getting to know new people (and eventually making friends) was identified as the most rated positive aspect of the application by both groups (38% of male users and 46% of female users); this difference is not statistically significant. For men, finding 'an easy date' was also very compelling (35%), but only one female saw it also as a benefit, and the difference is significant ($\chi2=5.93$, df = 1, $P = 0.01491$). Some 28% of the female users and 17% of the male users said that starting a romantic relationship was a benefit; the gender difference is not significant. Facilitating a 'job interview', practicing a 'language', and the feeling of 'empowerment' are benefits reported exclusively by female users, while having 'sex' and the opportunity to flirt 'from home' are exclusive to male users, but none of these categorizations are repeated in a manner that creates a statistically significant gender difference.

What are the positive aspects of Tinder?	Women (N=24)		Men (N=29)		Total (N=53)	
	n	%	n	%	n	%
Confidence	1	4	1	3	2	4
Dates	1	4	3	10	4	8
Easy dates*	1	4	10	35	11	21
Empowerment	2	8	0	0	2	4
Experience	3	13	2	7	5	9
Home use	0	0	3	10	3	6
Job interview	1	4	0	0	1	2
Language	1	4	0	0	1	2
Pastime	3	13	2	7	5	9
People / friends	11	46	11	38	22	42
Romance	7	29	5	17	12	22
Sex	0	0	1	3	1	2

Table 2: The positive aspects of Tinder. Note: From the original sample (N=54), 24 women and 29 men responded to this question (53 participants in total). The percentages in each column refer to the proportion of individuals of each gender that indicated the answer. Participants could indicate more than one answer. Statistical significance using a chi-squared test of interaction between categorical variables is indicated with italic font, and an asterisk (* - p<0.05; ** - p<0.01; *** - p<0.001).

When asked about the negative aspects of Tinder (Question 7), some substantial gender differences emerged (see Table 3). One-third of the women reported experiencing what they regarded offensive behavior toward them, while none of the men did so; this interaction between gender and reports of experiencing offensive behavior is significant ($\chi2=7.01$, df = 1, $P = 0.008093$). One-fourth of the women said that the application enabled interactions excessively focused on sex ('too sexual'), while only one man only expressed feeling bad about the 'objectification' embedded in the system; the interaction between gender and report of sexualized interactions is significant ($\chi2= 5.59$, df = 1, $P= 0.01808$). 28% of male users experienced unpleasant situations but only 12% of women said so; this difference is not statistically significant. Some answers like 'prostitution', 'superficial', 'being ignored', 'few matches', 'features', 'frustration' and 'unwanted sex' are exclusive to male users, while 'offensive behavior', 'too sexual', 'feeling vulnerable', 'impersonal' and 'rejection' are exclusive to female users.

What are the negative aspects of Tinder?	Women (N=25)		Men (N=29)		Total (N=54)	
	n	%	n	%	n	%
Boring	5	20	9	31	13	24
Different information	6	24	5	17	12	22
Features	0	0	3	10	3	6
Frustrating	0	0	2	7	2	4
Ignored	0	0	1	3	1	2
Impersonal	1	4	0	0	1	2
Incompatible people	3	12	3	10	7	13
Objectification	0	0	1	3	1	2
Offensive behavior**	7	28	0	0	7	13
Prostitution	0	0	1	3	1	2
Rejection	4	16	0	0	4	7
Superficial	0	0	3	10	3	6
Time consuming	1	4	2	7	3	6
Too sexual*	6	24	0	0	6	11
Unpleasant situation	3	12	8	28	11	20
Unwanted sex	0	0	1	3	1	2
Vulnerable	3	12	0	0	3	6

Table 3: The negative aspects of Tinder. Note: Every participant responded to the question (N=54). The percentages in each column refer to the proportion of individuals of each gender that indicated the answer. Participants could indicate more than one answer. Statistical significance using a chi-squared test of interaction between categorical variables is indicated with italic font, and an asterisk (* - p<0.05; ** - p<0.01; *** - p<0.001).

Regarding the feeling of respect during the experience on Tinder (Question 8), a significant difference emerges (see Table 4). Sixty-five percent of the men said they always felt respected while only 12% of the women reported always feeling respected. One-quarter of the women said they barely felt respected (12% never and 12% rarely) and another quarter felt respected only sometimes. All the male respondents reported always or often feeling respected. The interaction between gender and categories representing extent of experienced respect is significant (χ^2= 23.47, df = 4, P < 0.001). Inspecting Pearson residuals, it is evident that instances of females reporting always feeling respected is significantly lower (P < 0.05) and of males, significantly higher (P < 0.05) than one would expect if there were no interaction between gender and the perceptions of respect.

Did you feel respected on Tinder?	Women (N=25)***		Men (N=29)***		Total (N=54)	
	n	%	n	%	n	%
Always	3*	12	19*	66	22	41
Often	10	40	10	35	20	37
Sometimes	6	24	0	0	6	11
Rarely	3	12	0	0	3	6
Never	3	12	0	0	3	6

Table 4: Feeling of respect on Tinder. Note: Every participant responded to the question (N=54). The percentages in each column refer to the proportion of individuals of each gender that indicated the answer. Participants indicated only one answer. Statistical significance using a chi-squared test of interaction between categorical variables is indicated with italic font, and an asterisk (* - p<0.05; ** - p<0.01; *** - p<0.001). Pearson residuals are highlighted similarly.

Another slight difference emerges with respect to the time of use of the application among participants (Question 9). Among women, the majority used for less than 1 year (68%), while among men the majority used for more than 1 year (55%); the mean of months' usage among women is 9 and among men is 13. These differences are not statistically significant (neither using χ^2 on the test of interaction between gender and the binary factor of months' usage less than 12, nor using a Wilcoxon test on the difference between medians of months' usage).

The majority of male and female participants had uninstalled Tinder (Question 10). The majority of women uninstalled it due to a negative experience on the application (55%) while the majority of men uninstalled it because they started a new relationship (67%); however, this difference is not statistically significant. There are differences with respect to the reason for uninstalling the application (Question 11), but they are not statistically significant. In both groups there are three main reasons: 'frustration', 'demotivation' and 'the start of a relationship'. Forty-five percent of the women uninstalled the application because they started a new relationship, while 33% of the men uninstalled it due to an overall negative experience of the application.

When asked about the gender of the developer (Question 12), 72% of the women reported to believe it was a man, 16% said they had no opinion and 12% said it was a woman. Among men, 59% reported to believe it was a man, 17% had no opinion, 10% said it was a woman, 7% said it was a team composed of both genders, and 7% said it did not matter. The interaction between gender and speculation regarding the gender of the developer is not statistically significant.

In response to Question 13, participants revealed whether they think there is a difference between what women and men want on Tinder in general (see Table 5). The majority of men said there is no difference (57%), whereas the majority of women perceive a difference (59%). The difference in response between the genders is not statistically significant. Those who think there is a difference between the two groups pointed out (early equally between male and female respondents) that usually men are looking more often for sex than women or that women are looking more often for a relationship than men.

When asked what would make their experience better (Question 15), both groups rated 'accurate matching' most highly - 36 % of women and 44% of men; certainly, the difference in reply by gender was not statistically significant. Apart from the improvements in common between the two groups, women also pointed out 'block offensive behavior'. Men pointed out 'more matches', 'more female users', 'feedback', and 'women were more open'. Other responses were: 'I don't care', 'no', 'not sure', 'paid features', 'more interaction', and 'more respect'.

Perceived difference of motivations	Women (N=22)		Men (N=28)		Total (N=50)	
	n	%	n	%	n	%
A. Men look more for sex	12	551	10	36	22	44
B. Women look more for Relationship	10	46	9	32	19	38
Total Yes	13	59	12	43	25	50
Total No	8	36	16	57	24	48
Total I don't know	1	5	0	0	1	2

Table 5: Perception of difference of motivations between male and female users. Note: From the original sample (N=54), 22 women and 28 men responded to this question (50 participants in total). The percentages in each column refer to the proportion of individuals of each gender that indicated the answer. Participants indicated only one answer between 'yes', 'no' or 'I don't know'. However, participants who answered 'yes' could indicate more than one reason (A, B or both).

In response to the last question (Question 16), 80% of female respondents and 79% of male respondents said they had already used another online dating application apart from Tinder. In the female group, 6 said to prefer Tinder but only 13 expressed their preference. 21 male participants expressed their preference and 12 preferred Tinder. Thus, approximately half of the respondents in both groups prefer Tinder while the other half either prefer other applications or have no preference.

Discussion

The survey results reveal gender differences with respect to several themes related to online dating. The use of a mixed methods approach was central to identify those differences. Quantitative analysis also made it possible to compare the experience of the two genders. Of the differences explored, statistical significance was noted in the interactions between gender and categorical representations of the propensity to feel respected. While the sample analyzed is small, it is not so small as to prohibit detection of statistically significant effects or trends approaching significance. The purpose of this research was to identify gender differences in response to the use of Tinder and reflect upon the potential existence of bias in the design of the application. Here we discuss the most relevant numbers.

The first difference is regarding the motivation to use Tinder. Almost half of male users said they used it for hooking up, while only a quarter of female users used it for that purpose. Also, there is a slight difference in the desire to find a partner in order to develop a romantic relationship. Almost half of female users said this was their aim in comparison to 31% of men. Thus, there is a revealed difference in the motivations to use Tinder, since men appear to look for hookups more than women. This result reveals that, for women, Tinder is more a tool for social interaction while for men it is also a tool to find easy sexual interaction. Because 4% declared explicitly to be looking for sex, this also possibly indicates that men feel more comfortable to declare they are looking for sex while the lack of such a response within the female group can either indicate a taboo about openly saying to be looking for sex or that women are less likely to have casual sex and one-night stands. If men and women are equally likely to seek casual sex, these results suggest that women are cautious about looking for casual sex using an online dating application.

Despite the implicit gender roles and taboo around female sexuality, results for Question 2 show that women are gaining confidence to date online, since 68% of the participants expressed to have no concerns about using the application. However, 32% of female participants still had concerns prior to the installation of Tinder. Their full comments provided anecdotal evidence that they feared to be recognized by known people, judged, exposed, vulnerable, objectified or to feel ashamed. For the 24% of male users, who expressed a need to ponder possible consequences before installing the application, the main concern prior to installation is about using an online application for flirting, which seemed odd to them. Hence, the answers for this item disclose a subjective difference between female and male groups with regards to concerns with online dating: while male concerns are restricted to the oddity of using an application, female concerns are related to their psychological integrity.

Differences come to light regarding the benefits of using the application (Question 6). Similarly, to results with respect to motivations (Question 1), one third of male users reported benefiting from 'easy dates', while only 1 female user reported that benefit. Additionally, a greater number of women (compared to men) reported benefiting from starting a romantic relationship. This result reinforces how women perceive relationship formation as a benefit while men find casual sex a benefit. However, more men (compared to women) reported uninstalling the application due to the start of a romantic relationship. 31% of male participants

declared looking for a relationship in Question 1 and 67% of those who answered Question 11 uninstalled the application due to a new relationship, but only 17% reported that as a benefit. These numbers possibly indicate that the application was not useful for relationship formation among men. Indeed, in response to Question 7 (negative aspects of Tinder), 31% of users said the application was boring and 28% said they had experienced unpleasant situations. This is possibly the reason why 'accurate matching' was by far the most rated improvement suggested by men in response to Question 15. Despite not having 'good matches', they still benefitted from casual sex.

Among women, 'accurate matching' was also the most frequently desired improvement. Nevertheless, it seems female users either could not benefit from hookups without accurate matching as male users could or they do not really consider it a major benefit, even though 24% said they were looking for casual dates in Question 1. For female users, the most frequently reported negative aspect of their experience is 'offensive behavior' towards them: 32% of the women we surveyed reported that experience. The second most rated negative aspect was the perception of a 'lack of accuracy' in profile information (28%), followed by the hyper-sexualization of interactions enabled by the application (24%). In total, 12 women (48%) reported unpleasant gender dynamic on the application (the sum of those women who experienced offensive behavior, who felt it too sexual, and/or who felt vulnerable).

In response to Question 8, only 12% of female users said they felt always respected on Tinder, while 65% of male users said so. Because almost half of female participants reported that they never, rarely or only sometimes felt respected, it is possible to assume that there is a gender factor that divides the experience of women and men. The vast majority of men were treated well while half of women were not. In fact, the majority of women uninstalled Tinder due to a negative experience (55%) in the application and the majority of men uninstalled it because they started a new relationship (67%). Otherwise, they would possibly continue to use Tinder to benefit from hookups, even when lacking a 'good match' or if its 'boring', since they are more likely to feel respected using Tinder and probably not exposed to psychologically harmful situations. Indeed, men are more likely to use Tinder for a longer time than women: the majority of women used it for less than one year (64%) and the majority of men for more than one year (55%).

To conclude the analysis, the perception of the influence of gender in the design of the application seems to be more evident to female users. 72% of women and 59% of men think the developer is a man. Both groups expressed awareness of male domination in technology, which is very likely to influence the application's design, according to Williams'[19] study on gender bias in design. The numbers indicate that men's needs are favored in the design of Tinder. Moreover, 57% of the men said they don't think there is any difference from what men and women look for on Tinder, while only 32% of the women think so. However, 41% of men and 52% of women perceived a difference. In fact, there is a difference that approaches statistical difference in the motivations to use it, as indicated in the results for Question 1.

19 Williams, G. (2014). Are you sure your software is gender-neutral? *Interactions, 21*(1), 36-39. doi:10.1145/2524808.

The gender blindness, in this case, is also to consider that both male and female users have the same needs while using an online dating application. As pointed out, female users have concerns about being objectified, and feeling vulnerable, exposed, among others, and have different motivations for using the application than men. Thus, their fears and hopes are part of their needs. If women do not feel fully respected, if they uninstall Tinder due to negative experiences, if they sense unpleasant gender dynamics in the application, among other perceptions already mentioned, then the application quite likely disregards females' needs.

The application does not seem to fully meet men's needs as well. Although they are more likely to feel respected and less frustrated than women, they also point out that the application is boring, which can also be addressed as a problem of design. It is interesting that the majority of both genders believed the developer of the app was a man. Perhaps, this has to do with the conception of programming as a primarily male's job.[20]

Contributions, Limits and Challenges

The results of this survey reveal perceived differences between female and male Tinder users regarding motivations, the feeling of being respected, the benefits of using Tinder and the downsides of the experience, among other components of the experience of an online dating application. Apart from highlighting these differences, a closer analysis brought to light how these differences are related to gender bias in the design of the application. Gender biases are more likely to occur when the design team is mainly composed in a manner in which one gender is in a clear majority, however, the presence of women in the team alone may not ensure that the design will be free from bias and that women's needs will not be disregarded. A commitment to use design approaches that focus on users' needs and to develop methodological tools to reduce biases is also important.

The results disclosed here, however, are limited to a small sample of participants and cannot be extended to the whole population of Tinder users. Yet, given that the pattern of response among women in this study corresponds to the patterns identified in our earlier study, it is likely that a similar pattern emerges from additional studies of both sexes, using a larger sample of participants. Further studies are also needed to explore how homosexual males and females feel about using Tinder and how they perceive the app's design. It is an open question with additional categories of response and response distributions will emerge where individuals seeking same-sex matches are more fully represented.

Regardless of the limitations of the sample, the figures presented by the survey draw attention to important issues in the development of mobile applications and important issues in initiating the development of relationships in an online setting. Apart from quantifying the experience of Tinder users, another gain of the study was to find the categories of answers of participants, which was essential to understanding users' experience. This understanding can be deepened through other quantitative studies, since preferences and the gender dynamic have already been described here. For this analysis we have focused on the quantitative quality of the mixed

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20   Williams, Are you sure your software is gender-neutral?.

method in order to elucidate the transformation of a qualitative interview into quantitative data. Nevertheless, the subjective analysis can also be deepened using the data collected here.

Acknowledgment

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4: STEREOTYPICAL GENDER ATTRIBUTIONS ACROSS SEXUAL ORIENTATIONS ON TINDER: EVIDENCE FROM TURKEY

AMIR HETSRONI, MERIÇ TUNCEZ, AND MINA ÖZDEMIR

Human beings have invented creative ways to attract potential mates, just like animals display visible cues such as male peacocks' tail feathers that promote their appeal to females. Social and evolutionary pressures may push human species to invest resources in self-presentation techniques suitable for attracting potential mates like dressing up, applying make-up, etc. Examples can be found in various media conduits.[1] In the past, personal ads published in newspapers specified relationship seeker's appearance. The introduction of the internet led to the emergence of online dating websites where people post pictures of themselves alongside a short description. A matching algorithm is then used to locate compatible partners.[2] By the late 2000s, the appearance of smartphones, social media networks and geo-social networking services paved the road to the emergence of location-based real-time dating apps. The first apps targeted mainly gay men (e.g., Grindr), but apps that target the heterosexual population like Tinder (launched in 2012) soon followed.[3] While the original purpose of the app was to build a location-based social networking platform, it quickly became clear that date searching (including short term and even one night stand) is its predominant use[4] and what makes it popular.[5]

The goal of this article is to explore Tinder users' impression management strategies as evidenced and differentiated by the interaction between gender and sexual orientation. Since Tinder is primarily a visual platform, we concentrate on analyzing how users present themselves on their main profile pictures dismissing the marginal often left blank text space. We examine visual presentation across gender and sexual orientation lines.

Online Dating Platforms

The use of online dating sites and location-based dating apps has risen in recent years. In the

1   Galante, M. (2012). *Ten scientifically proven ways to make yourself more attractive to the opposite sex*. Retrieved from https://www.businessinsider.com/how-to-attract-the-opposite-sex-2012-9.
2   Blackwell, C., Birnholtz, J., & Abbott, C. (2014). Seeing and being seen: Co-situation and impression formation using Grindr, a location-aware gay dating app. *New Media & Society*, *17*(7), 1117-1136. doi:10.1177/1461444814521595.
3   Sumter, S. R., Vandenbosch, L., & Ligtenberg, L. (2016). Love me Tinder: Untangling emerging adults' motivations for using the dating application Tinder. *Telematics and Informatics*, *34*(1), 67-78. doi:10.1016/j.tele.2016.04.009.
4   Orosz, G., Tóth-Király, I., Bőthe, B., & Melher, D. (2016). Too many swipes for today: The development of the Problematic Tinder Use Scale (PTUS). *Journal of Behavioral Addictions*, *5*(3), 518-523. doi:10.1556/2006.5.2016.016.
5   Fruhlinger, J. (2018). *Why Tinder is the most popular online dating app: Digital trends*. Retrieved from https://www.digitaltrends.com/social-media/tinder-most-popular-dating-app/.

United States alone 15% of the adults are willing to confess that they have at least once used an online dating site or application.[6] Young adults (18-24 years) constitute the majority of online dating service users and over half of Tinder users belong to this age bracket.[7] Although online dating, and specifically Tinder usage, is becoming more popular in recent years among older people the vast majority of users are still in their 20s.[8]

The presentation of users in dating websites and apps is partly guided by scripts of gender roles and sexual orientation.[9] The two main sexual orientations, which may exhibit different courtship habits are heterosexuality and homosexuality. Historically, homosexuality has been defined with effeminate behaviour in contrast with heterosexuality, which is more masculine emphasizing manliness and physical strength.[10] Studies that focused on gay men's personal advertisements in dating websites and apps discovered that the most romantically undesirable characteristics of gay men are stereotypically feminine attributes,[11] and that the majority of gay men look for masculine traits in their partners and claim to possess masculine traits for themselves.[12]

Tinder is targeted at both homosexual-identified and heterosexual-identified people. It is uniquely positioned in terms of its application design and matching algorithm presenting a binary system of 'Like' or 'Not' where users rate (by swiping right or left) the perceived attractiveness of potential mates after examining a visual and textual profile.[13] This binary logic of the swipe gesture made Tinder famous[14] and differentiates it from the competitors.[15] Another distinct feature of Tinder is its partial integration with Facebook in order to combat deception and misuse of private photos.[16] This posits Tinder as relatively more reliable than rival apps. Bosker[17] regarded Tinder as a 'judging app' in which users are presented with

6   Pew Research Center (2016, November 17). 15% of American adults use online dating sites or mobile apps. Retrieved from https://www.pewinternet.org/2016/02/11/15-percent-of-american-adults-have-used-online-dating-sites-or-mobile-dating-apps.

7   Dredge, S. (2015). 42% of people using dating app Tinder already have a partner, claims report. Retrieved from https://www.theguardian.com/technology/2015/may/07/dating-app-tinder-married-relationship.

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13   Orosz et al., Too many swipes for today.

14   Fruhlinger, Why Tinder is the most popular online dating app.

15   David, G., & Cambre, C. (2016). Screened intimacies: Tinder and the swipe logic. *Social Media + Society*, *2*(2), 1-11. doi:10.1177/2056305116641976.

16   Sumter et al., Love me Tinder.

17   Bosker, B. (2015, October). Why Tinder has us addicted: The dating app gives you mind reading

dating candidates. The judgment in Tinder is based almost entirely on profile pictures. Only if both users judge each other's profile as YES, then a match is obtained, and a conversation where the candidates may express their verbal skills may begin.[18]

While both genders and sexual orientations need to make a quick judgment based mostly on pictures, their considerations might be different.[19] To understand that we need to look at the literature concerning gender differences in mate selection. For example, the physical need of sexual satisfaction is particularly prominent among men,[20] while financial status and stability are more important to women.[21] Gender differences determine the type of visual signs selected by the dating candidate for his profile since these signs serve as the 'selling points'.[22] It all comes down to impression management or self-presentation that is inherently similar in dating websites and apps to face-to-face romantic interactions.[23] In face-to-face interactions, as Goffman[24] argued, individuals guide other people's impressions of themselves through manipulating appearance, context and behavior. The virtual surroundings offer increased control over what is portrayed and what is omitted[25] and enables a somewhat unrealistic presentation of the candidates by featuring old photos, omitting fatty body parts from the pictures, and using camera angles that mask lower body height.[26] Consequently, in Goffmanian terms, Tinder is an arena where users do their best to provide an attractive self-presentation in order to enhance their market value and mating success.

Research on personal ads that preceded the internet age revealed that dating candidates tend to adhere to traditional gender roles. Men promised to offer instrumental benefits such as financial security, and women were offering expressive and communal benefits like nurturing.[27] Gay men displayed extended concern for physical characteristics such as body shape. Lesbians, on the other hand, indicated a lower amount of sexualization and concern about body shape. Sexual and physical dimensions of attractiveness were found to be more

powers. *Huffington Post*. Retrieved from http://www.huffingtonpost.com/2013/04/09/Tinder-dating-app_n_3044472.html.

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23   Toma, C., Hancock, J., & Ellison, N. (2008). Separating fact from fiction: An examination of deceptive self-presentation in online dating profiles. *Personality and Social Psychology Bulletin*, *34*(8), 1023-1036. doi:10.1177/0146167208318067.

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26   Orosz et al., Too many swipes for today.

27   Lance, L. M. (1998). Gender differences in heterosexual dating: A content analysis of personal ads. *Journal of Men's Studies*, *6*(3), 297-305. doi:10.1177/106082659800600303.

salient among gay men in accordance with homosexual male culture that promotes a lean and muscular body shape[28] than among heterosexual males. The latter, on the other hand, exhibited greater admiration to a long-term and committed relationship while gays were more often seeking partners for transient or sexually promiscuous relationships.[29]

Sexual Orientation and Stereotypes

A stereotype is 'a heuristic that allows us to simplify our world and form quick judgments about other people based upon their group membership'.[30] Many stereotypical assumptions are made about people based on their gender and their sexual preference. For instance, lesbians are presumed to have more masculine attributions compared to women who are romantically interested in men. Gay men are stereotyped to have more feminine and less masculine attributions compared to men, who are romantically interested in the opposite sex.[31] Some argue that the stereotypes made about homosexual men and women are not accurate because the attributes are made from a heteronormative standing point,[32] however, a study that measured similarities and differences of stereotyping and self-stereotyping among heterosexual and homosexual men found that heterosexual men stereotype gay men the same way that gay men stereotype other gay men.[33] Therefore, it can be argued that gay people do conform to the stereotypical assumptions that are made about them.[34] Most important in our case is the manifestation of sexual orientation stereotypes in dating websites and apps, which has been pointed out by relationship experts in the popular press.[35]

Turkey: The Geo-Cultural Context of our Study

Before we pose our research questions and hypotheses, few words are due about the geo-cultural context of the study. We conduct this research in Turkey, a secular Muslim country (according to its constitution) built after the collapse of the Ottoman Empire. Often described

28   Kimmel, S. B., & Mahalik, J. R. (2005). Body image concerns of gay men: The roles of minority stress and conformity to masculine norms. *Journal of Consulting and Clinical Psychology, 73*(6), 1185-1190. doi:10.1037/0022-006x.73.6.1185.

29   Barry, B. (2017). *What happens when men don't conform to masculine clothing norms at work?* Retrieved from https://hbr.org/2017/08/what-happens-when-men-dont-conform-to-masculine-clothing-norms-at-work.

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34   Bickford, John H. (1999). Stereotype conformity in gay people and the homosexual identity development process. *Unpublished Master's Thesis*. University of Massachusetts at Amherst, MA. Retrieved from: https://scholarworks.umass.edu/theses/2341.

35   Barry, What happens when men don't conform to masculine clothing norms at work?.

as a hybrid of Europe and the Middle East due to its geographical location and history, Turkey has served as a battleground of a culture war between western liberal ideals and Muslim foundations. Homosexuality is a good showcase of this war. Even though Turkish law does not ban homosexuality, there are also no rules against discrimination of gays and lesbians.[36] The foreign press often reports on cases where gays are physically attacked because of their sexual preference[37] and a recent survey noted that as many as 84% of Turkish citizens do not want to have to live next door to members of the LGBT community.[38]

Turkish culture, by all means, favors heterosexuality, which is deemed to be a natural basis of family life. In contrast, homosexuality is viewed as playground (in the best-case scenario) and as religious deviance (in the worst-case scenario). Homosexuality is also often viewed as a threat to masculinity, which is glorified in patriarchal culture. Some Turkish families threaten and even dismiss their own family members, if they come out of the closet. It is common, particularly in rural areas, for 'honor killings' to take place, where family members kill their homosexual relative in order to gain back the 'honor' of the family and cleanse its 'sins'. Thus, homosexuals often hide their identity from their families and also in workplaces where discrimination because of sexual orientation is common.[39] The outcome is that homosexuality is practically invisible in most parts of the country and remains visible only in few districts of the bigger cities in Turkey - Istanbul, Izmir, and Ankara.

Research Questions and Hypotheses

We pose three research hypotheses with a directional prediction and ask three research questions where the scholarship accumulated hitherto does not suffice to make an unequivocal prediction.

H1: Feminine Artifacts among Male Tinder Users

We cogitate that the frequency of feminine decorative artifacts among gay men who are Tinder users will be higher than their frequency among heterosexual male who use the app. The basis of this hypothesis is the stereotype according to which homosexual men decorate themselves more often with feminine artifacts.[40]

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36   Cunningham, E. (2016). In Turkey, it's not a crime to be gay. But LGBT activists see a rising threat. Retrieved from https://www.washingtonpost.com/world/middle_east/in-turkey-its-not-a-crime-to-be-gay-but-lgbt-activists-see-a-rising-threat/2016/06/24/18fe91a6-37d2-11e6-af02 1df55f0c77ff_story.html?utm_term=.e53bf61749da.

37   Öktem, K. (2008). Another struggle: Sexual identity politics in unsettled Turkey, *Middle East Report Online, 2,* 1-3.

38   Country Policy and Information Note Turkey: Sexual orientation and gender identity (2017). Retrieved from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/619683/Turkey_-_SOGI_-_CPIN_-_v2_0__June_2017_.pdf.

39   Öztürk, M. (2011). Sexual orientation discrimination: Exploring the experiences of lesbian, gay and bisexual employees in Turkey. *Human Relations*, *64*(8), 1099-1118. doi:10.1177/0018726710396249.

40   Bickford, Stereotype conformity in gay people and the homosexual identity development process; Shively et al., The identification of the people sex-role stereotypes.

H2: Feminine Artifacts among Female Tinder Users

We presume that the frequency of feminine decorative artifacts among lesbian Tinder users is lower than among heterosexual females who use the app. The basis of the hypothesis is the stereotype according to which homosexual females less often wear typical female jewelry.[41]

H3: Masculine Artifacts among Female Tinder Users

We hypothesize that the frequency of masculine decorative artifacts among lesbian Tinder users is higher than it is among heterosexual females who use the app. The renowned stereotype according to which lesbians adopt masculine attributes[42] serves as basis of the hypothesis.

RQ1: Masculine Artifacts among Male Tinder Users

We ask whether there is a difference in the frequency of masculine decorative artifacts between homosexual and heterosexual male Tinder users. While stereotypes about gays' tendency to enhance their appearance by adding decorative artifacts is common,[43] the scientific scholarship has so far refrained from actually testing them. Therefore, we pose a question without making a preliminary prediction.

RQ2: Gender-Neutral Artifacts among Male Tinder Users

Since no research on the connection between tattoos and piercings and men's sexual orientation exists, we ask without positing a preliminary prediction whether there is a difference in the prevalence of gender-neutral decorative artifacts between gays and heterosexual males.

RQ3: Gender-Neutral Artifacts among Female Tinder Users

We inquire whether there is a difference in the prevalence of gender-neutral decorative artifacts between lesbians and heterosexual women. Due to the lack of previous research on the topic, the question is proposed without forecasting the answer.

Method

We randomly sampled the profiles of 560 heterosexual men, 571 homosexual men, 560 heterosexual women and 848 homosexual women Tinder users from Turkey. The age of the users ranged between 18 years old and 69 years old with a mean of 25.3 years old. Four research assistants used a blank Tinder account for gathering the data for the research. Two-thousand five-hundred and thirty-nine user profiles were coded. After dividing them into

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41   Barry, What happens when men don't conform to masculine clothing norms at work?.
42   Barry, What happens when men don't conform to masculine clothing norms at work?.
43   see Bickford, Stereotype conformity in gay people and the homosexual identity development process; Shively et al., The identification of the people sex-role stereotypes.

four groups based on gender and sexual orientation (homosexual men, heterosexual men, homosexual women, and heterosexual women) we analyzed the physical attributions in their profile picture, which served as unit of analysis, into three categories: *masculine decorative artifacts, feminine decorative artifacts* and *gender-neutral decorative artifacts*. Masculine artifacts consisted of 'muscle exposure' (yes/no) and 'facial hair' (yes/no). All the men were coded in this category, but women were only coded for muscle exposure. Feminine artifacts consisted of 'long hair' (longer than shoulders/ shorter than shoulders), 'earrings' (yes/no), 'make-up' (yes/no) and 'lipstick' (yes/no). All the women were coded in this category, but men were excluded from make-up and lipstick. Gender-neutral artifacts included 'tattoos' (at least one/none) and 'piercings' (at least one/none). Both females and males were coded in this category. This classification of decorative artifacts is based on the literature concerning dress code, decoration and gender.[44]

Each Tinder profile was coded separately by two different coders, who were not privy to the study's hypotheses and questions and were trained in using the coding book on 100 profiles that were not part of the sample. To asses *coding reliability*, we computed *Cohen's Kappa* coefficient for each category. The values - fluctuating from κ=.902 (for muscle exposure) to κ=.977 (for facial hair) - indicate adequate reliability.

Results

The results of the coding appear on Table 1. A series of *Mann Whitney tests* for ordinal scales and *chi-square analyses* for nominal data were performed to answer the research questions and test the hypotheses.

		Heterosexual Men	Homosexual Men	Heterosexual Women	Homosexual Women
		(n=560)	(n=571)	(n=560)	(n=848)
Gender-Neutral Artifacts					
	Tattoos	2.0%	5.4%	6.1%	8.1%
	Piercings	0.0%	4.2%	9.2%	10.4%
Masculine Artifacts					
	Muscle Exposure	15.3%	14.1%	2.6%	1.0%
	Facial Hair	81.3%	82.4%	----	----
Feminine Artifacts					
	Long Hair	2.8%	6.9%	69.5%	59.5%
	Earrings	4.4%	10.2%	37.1%	41.5%
	Make-up	----	----	69.9%	62.5%
	Lipstick	----	----	91.4%	58.5%

Table 1: Body decoration of Tinder users by sexual orientation (N=2,539).

44   Lindemuth, C. J., Thomas, L. A., Mates, Hadley A., & Casey, J. A. (2011). Gender patterns in dress and outward appearance: An individual choice or fulfillment of cultural expectations? *Modern Psychological Studies, 17*(1), 30-36.

H1: Feminine Artifacts among Male Tinder Users

The first research hypothesis (*H1*) predicted that the frequency of feminine decorative artifacts among homosexual men who use Tinder would be higher than their frequency among heterosexual men who use the app. After computing an index of feminine decorative artifacts consisting of long hair, earrings, make-up and lipstick and ranging from 0 (when none of the artifacts was identified) to 3 (when all of them were present) a Mann-Whitney test for ordinal scales with Z approximation was conducted. The results are significant {Z=4.78, *P*<.001}. This means that in Tinder homosexual men are more likely than heterosexual men to be pictured with feminine decorative artifacts. More specifically, when it comes to 'long hair', while only 2.8% of the heterosexual men display long hair, the figure is as high as 6.9% among homosexuals. The difference between the groups is significant {$\chi2_{(df=1)}$ = 10.8 *P*<.001}, but the effect is small (Cramer's *V*=.094). When it comes to 'earrings', we divide the male sample into two groups (those who wear earrings and those who do not) and see that while only 4.4% of the heterosexual Tinder male users are wearing earrings, among homosexuals the rate mounts up to 10.2%. This difference is significant {$\chi2_{(df=1)}$ = 14.3 *P*<.001}, but the effect, again, is not particularly large (Cramer's *V*=.112).

H2: Feminine Artifacts among Female Tinder Users

The second research hypothesis (*H2*) predicted that the frequency of feminine decorative artifacts among lesbian Tinder users would be lower than among heterosexual female Tinder users. After computing an index of feminine decorative artifacts consisting of long hair, earrings, make-up and lipstick and ranging from 0 (when none of the artifacts was identified) to 4 (when all of them were present), a Mann-Whitney test for ordinal scales with Z approximation was performed. The results are significant {Z=2.0, P=.04}. This means that lesbian Tinder users are less likely than heterosexual women who use the app to be featured with feminine decorative artifacts. To further examine distinctions between heterosexual females and homosexual females in hair length, we divide the female sample into two groups based on hair length (longer than shoulders vs. shorter than shoulders) and run a chi-square analysis. The results indicate that 69.5% of the heterosexual females have long hair whereas among homosexual female Tinder users the figure (59.5%) is lower. The difference between the groups is significant {$\chi2_{(df=1)}$ = 16.44 P<.001 Cramer's *V*=.101}. Hence, heterosexual women are more likely than lesbians to have long hair. To examine differences in earrings, we split the female sample into two groups (no earrings vs. with earrings) and run a chi-square analysis. The results show that 41.5% of the lesbians are wearing earrings, while among the heterosexual women the figure is only 37.1%. However, the difference between the groups is not significant {$\chi2_{(df=1)}$ = 1.469 P=.225}. To inspect differences in applying make-up, we divide the female sample again into two groups (with make-up vs. without make-up) and run a chi-square analysis. The results indicate that 69.9% of the heterosexual females are pictured with make-up. Among the lesbians the figure is only 62.5%. The difference between the groups is significant {$\chi2_{(df=1)}$ = 10.5 P<.001 Cramer's *V*=.082}. Finally, to examine differences in applying lipstick, we split the female sample into two groups (with lipstick vs. without lipstick) and run a chi-square analysis. While 58.5% of the lesbians are applying lipstick, among heterosexual women the figure is as high as 91.4%. The difference between the groups is

significant {$\chi2_{(df=1)}$ = 140 P<.001 Cramer's V=.336}. This means that heterosexual women are more likely than lesbians to wear lipstick.

H3: Masculine Artifacts among Female Tinder Users

The third research hypothesis (*H3*) predicted that the frequency of masculine decorative artifacts among lesbian Tinder users would be higher than among heterosexual females who use the app. Specifically, to inspect differences between heterosexual women and homosexual women in applying masculine decoration we look at muscle exposure and divide the female sample into two groups — those who expose muscles vs. those who do not. Only 2.6% of the heterosexual women exposed muscles, but among homosexual women the figure (1%) was even lower. The difference between the groups is significant {$\chi2_{(df=1)}$ = 5.69 P=.017 Cramer's V=.060}. Therefore, it can be argued that heterosexual women are slightly more likely to expose muscles in their Tinder pictures in comparison with homosexual women, although the rate of muscle exposure is generally low among women.

RQ1: Masculine Artifacts among Male Tinder Users

The first research question (RQ1) asked if there is a difference in the prevalence of masculine decorative artifacts between homosexual and heterosexual male Tinder users. After computing an index of masculine decorative artifacts consisting of muscle exposure and facial hair and ranging from o (when none of the artifacts was identified) to 2 (when both of them were present), a Mann-Whitney test for ordinal scales with Z approximation was performed. The results are not significant {Z=.04, P>.05}. Therefore, according to our statistics, homosexual male Tinder users are not different from heterosexual males in applying masculine decorative artifacts. When we look closely at the numbers of the two groups, we notice the similarity: 81.3% for heterosexual men vs. 82.4% for gays in facial hair; 15.3% for heterosexual men vs. 14.1% for gays in muscle exposure.

RQ2: Gender-Neutral Artifacts among Male Tinder Users

The second research question (RQ2) asked whether there is a difference in the prevalence of gender-neutral decorative artifacts between homosexual and heterosexual male Tinder users. After computing an index of gender-neutral decorative artifacts consisting of tattoos and piercings and ranging from o (when none of the artifacts was identified) to 2 (when both of them were present), a Mann-Whitney test for ordinal scales with Z approximation was performed. The results are significant {Z=3.25, P<.05}. This means that there is a significant difference between homosexual and heterosexual male Tinder users in the prevalence of gender-neutral decorative artifacts. To further examine differences in piercings, we divide the male sample into two groups (with piercings vs. without piercings) and run a chi-square analysis. While none of the heterosexual men was pictured with piercings (excluding earrings), 4.2% of the homosexuals had a photo of themselves with this decorative artifact. The difference between the groups is significant {$\chi2_{(df=1)}$ =25.2, P<.001 Cramer's V=.060}. To inspect differences between heterosexual males and gays in tattoos, we divide the male sample into two groups (with tattoos vs. without tattoos) and run a chi-square analysis. Whilst

2% of the heterosexual men had tattoos, among the gays the figure was as high as 5.4%. Yet, the difference between two groups is not significant {$\chi2_{(df=1)}$ = 0.87 P=.35}. We conclude that in both gender-neutral artifacts homosexual male Tinder users overtake heterosexual males, but the differences are significant only in piercings.

RQ3: Gender-Neutral Artifacts among Female Tinder Users

The third and final research question (RQ3) asked whether there is a difference in the prevalence of gender-neutral decorative artifacts between homosexual and heterosexual female Tinder users. After computing an index of gender-neutral decorative artifacts consisting of tattoos and piercings and ranging from 0 (when none of the artifacts was identified) to 2 (when both of them were present), a Mann-Whitney test for ordinal scales with Z approximation was performed. The results were not significant {Z=1.40, P>.05}. This means that lesbians and heterosexual female Tinder users do not differ in the likelihood to be pictured with gender-neutral decorative artifacts. When we look closely at specific indicators, we see that the figures in both groups are almost similar: 8.0% for lesbians vs. 6.1% for heterosexual women in tattoos; 10.4% for lesbians vs. 9.2% for heterosexual women in piercings.

Discussion

By content analyzing the profile pictures of over two-thousand and five-hundred Tinder users from Turkey we examined the accuracy of stereotypical visual attributions pertaining to sexual orientation and related to the self-presentation of dating candidates across the genders. Compared to heterosexual women, lesbians less often apply most of the feminine decorative artifacts and more often display masculine decoration, but there is no difference between the two groups of women in adopting gender-neutral decorative artifacts. Among men, gays score higher than heterosexuals in all kinds of decoration but only in piercings (a gender-neutral decorative artifact) the difference passes the significance threshold. All in all, differences between the genders are by far larger than within them. For example, while the share of homosexual men with long hair was 8.5 times approximately smaller than the share of lesbians with long hair, the share of heterosexual men with long hair was only 2.5 times approximately smaller than the share of homosexual men with long hair.

What we actually asked in this study was to what extent renowned sexual orientation related stereotypes are manifested in raunchy dating app in a conservative society like Turkey where stereotypes are notably present in everyday life.[45] Therefore, we expected to find considerable differences between homosexual and heterosexual Tinder users across gender lines. We found them among women, as lesbians less often displayed feminine decoration and more often exposed their muscles. The trend was less significant among men. Assuming that homosexual men in Turkey are not always thrilled to publicly identify as such,[46] the difference

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45   Engin, C., & Pals, H. (2018). Patriarchal attitudes in Turkey 1990—2011: The influence of religion and political conservatism. *Social Politics: International Studies in Gender, State & Society*, *25*(3), 383-409. doi:10.1093/sp/jxx021.

46   Country policy and information note on Turkey.

between the genders i.e. why homosexuals do not adopt feminine decoration like lesbians adopt masculine decoration can be explained by societal sanctions typical of Turkish culture.[47] In a patriarchal society like Turkey that glorifies masculinity,[48] the high prevalence of facial hair (81.3% of the heterosexual males and 82.4% of the gays in our study) is not surprising. Homosexual men might feel pressed to keep their identities undisclosed,[49] whereas women's lack of conformation to gender stereotypes is viewed as less publicly problematic since it does not directly attack the masculine hegemony. Since the 1930s, it is common for Turkish women to wear pieces of men's attire such as trousers, regardless of their sexual preference.[50] Therefore, lesbians can more easily fly under the radar and avoid getting identified as lesbians (something that is not culturally favored), if they wear masculine garments. Men, on the other hand are more prone to be labeled as gay, when they apply stereotypical female artifacts.[51]

This brings us to the most notable gender difference. In all the decorative artifacts (with the exception of muscle exposure), women scored higher than men regardless of sexual orientation. Furthermore, the differences between the genders excelled inter-gender differences pertaining to sexual orientation. This can be explained by the fact that according to Islam, (which is the predominant religion in Turkey) any form of decoration that is typically worn by women is forbidden to men. Any feminine embellishment or something that may make men look like the opposite sex is forbidden.[52] The rate of earrings among women is quite high (hovering around 40%) but very low among men. While religious rules and customs do not allow men to dress themselves with garments that are also worn by women, this clerical ordinance does not apply to women.[53] Indeed, a respected share of the women in our sample (around 40%) did lack one of the typical feminine characteristics - long hair. Still, women outnumber men in feminine decoration artifacts, namely long hair and earrings (see Table 1). Yet, despite the low prevalence across the board of gender-neutral decoration (e.g., tattoos and piercings) - less than 10% in any of the groups - which can be explained by the fact that in Islam any form of body modification is forbidden to both genders.[54] Here too women outnumber men {Z=7.6, P<.001}.

In Goffmanian terms,[55] a Turkish man (heterosexual or homosexual), who wants to impress potential love mates in a dating app, tries to 'look like a man' and stay away from gender-neutral decoration, while a Turkish woman enjoys some flexibility in appearance. Interestingly,

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47 Öztürk, Sexual orientation discrimination.
48 Engin & Pals, Patriarchal attitudes in Turkey 1990–2011.
49 Paechter, C. (2006). Masculine femininities/feminine masculinities: power, identities and gender. *Gender and Education*, *18*(3), 253-263. doi:10.1080/09540250600667785.
50 Arvanitidou, Z., & Gasouka, M. (2013). Construction of gender through fashion and dressing. *Mediterranean Journal of Social Sciences*. doi:10.5901/mjss.2013.v4n11p111.
51 Barry, What happens when men don't conform to masculine clothing norms at work?.
52 *Earrings for Men - Islam question & answer*. (2019). Retrieved from https://islamqa.info/en/answers/1980/earrings-for-men.
53 Marcus, J. (1992). *A world of difference: Islam and gender hierarchy in Turkey*. London, England: Zed Books.
54 *Are Tattoos Haram in Islam - Islam Question & Answer*. (2019). Retrieved from https://islamqa.info/en/answers/20283/are-tattoos-haram-in-islam.
55 see Goffman, The presentation of self in everyday life.

none of the genders attempts to look particularly muscular (The rate of muscle exposure is less than 15% in both genders) – perhaps because Turkey is not a sport-driven culture.[56]

The key to understanding gender differences in this study and the tendency of gays not to adopt opposite sex decoration in large numbers is the need to conform to conservative societal standards in order to avoid imaginary and not so imaginary sanctions.[57] Will this trend prevail in cultures that are less patriarchal and less conservative? Further research is needed to answer the question.

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U S E R S

5: MIRROR MIRROR ON THE WALL, WHICH DATING APP AFFORDS THEM ALL? EXPLORING DATING APPLICATIONS AFFORDANCES AND USER MOTIVATIONS

LEAH E. LEFEBVRE AND XIAOTI FAN

Approximately 294 million adults across the world utilize online dating resources with the United States (U.S.), China, United Kingdom, Germany, and Australia generating the largest global revenue.[1] Potential users employ a multitude of internet-based dating services that include computer websites, mobile dating applications (apps), and hybrid platforms. Almost every age group is responding to the shift in the dating landscape.[2] Emerging adults, 18-to-29 years old, diligently use mediated platforms to find relationships. People over 50 years old are currently the fastest growing dating apps population segment,[3] but the usage of online dating services grows across all age groups.

Popular-press titles and countless internet-fused dating platforms offer opportunities to opt into the digital relationship arena.[4] People drawn into internet-based dating must determine which platform(s) allows payoff to match with other users, meet in person, potentially date, experience sexual intercourse, and/or garner a serious commitment (e.g., marriage, cohabitation, or love). Therefore, users must be careful to select platforms with specific affordances that align with their motivations to reduce uncertainty, prevent disillusionment, increase successful communication, and achieve their aspirations.

This chapter explores the affordances and motivations of mobile dating apps in an effort to identify potential influences on relational initiation and communication. We respond to calls to action for further investigate the user-technology relationship in dating apps[5] and why users select specific mobile dating apps.[6] This chapter used an exploratory approach to investigate the influence of channel affordances and user motivations. Ultimately, the variations based

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on affordances and motives may lead to different communicative and relational outcomes for users in their relationship initiation and development.

Mobile Dating Applications

Internet-fused dating expanded exponentially since the 90s and now includes mobile dating apps.[7] Recent advancements in communication technology (e.g., mobile phone) enabled people to initiate communication and relationships.[8] Dating sites and mobile apps have become popular and location-based real-time dating apps allow individuals to interact with people nearby without having met face-to-face (*FtF*).[9]

Opting into Mobile Dating Apps

Prior to the advent of mobile communication technologies, relationship initiations, whether platonic or romantic, were contingent on proximity for available partners.[10] New technological and structural affordances embodied within online and mobile dating apps and adaptations for smartphones enable further opportunities to initiate relationships. Traditional dating constituted initiation between individuals through physical contact within the field of potential partners often through immediate connection and weak or strong ties in one's social network.[11] Technology alters the conceptualization of proximity. Mobile dating apps expand the confines of proximity facilitating relationship and/or communication initiation[12] to potential partners beyond physical constraints.[13] Global-positioning system (*GPS*) parameters remove the need for physical proximity, while simultaneously expanding the availability for initial interaction. The app industry markets advantageous dating services—time, ease, and either targeted or extended proximity options—through satellite geolocation features[14] thus enabling access to numerous potential partners. Apps employ convenience features such as access to multiple technological platforms (e.g., Android or iOS), eligibility (e.g., age limitations), connection

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to other social networks (e.g., Instagram or Spotify), or subscriptions (e.g., free or premium). Many mediated dating apps utilize branding to draw in particular audiences.

This chapter focuses on various websites and apps that together represent the whole gamut of internet dating services. Beginning in 2009, one of the first smartphone-based dating apps, Grindr, a gay, bisexual, or curious men app, utilized geolocation features to allow users to find others looking for casual, platonic, and romantic relationships.[15] The location-based tool offered real-time dating via satellite, mobile, or geographical proximity system (*GPS*).[16] Consequently, many popular *GPS* mobile dating applications have emerged. This chapter concentrates on the most popular dating websites and apps in the USA - see Table 1.

	Match	POF	Ok Cupid	CMB	Hinge	Tinder	Happn	Bumble
Established	Apr. 1995	2003	Jan. 2004	Apr. 2012	2012; Oct. 2016 (Re-released)	Sept. 2012	Jan. 2014	Dec. 2014
Userbase	12 million	90 million	5 million	4 million	10 million	50 million	15 million	23 million
Slogan	More Relationships, More Marriages	Plenty of Fish (in the sea)	Dating Deserves Better	Meet Your Everything Bagel Today	The Relationship App	Swipe. Match. Chat.	Find the People You've Cross Paths With	Date, Meet, Network Better
Selection Process	Complete survey highlight partner and relationship preferences and personal characteristics. Algorithm used for match-making.	Swipe logic – Users complete a Chemistry Predictor utilized for match-making.	Swipe logic – Users complete personality quiz and algorithms questions.	Swipe logic – Women must initiate.	Users interact with each others' profiles (e.g., like and comment) to interact with another user's profiles.	Swipe logic – Either user can initiate.	Swipe logic – Only if users are in proximity of one another can they initiate.	Swipe logic – Women must initiate conversation within 24 hours after the first-move.
Cost	Freemium; subscription varies from $20.99 to $26.99	Freemium; subscription on $5.95/month	Freemium; subscription on varies from $6.95 to $24.90 depending on length	Freemium; subscription on 34.99/month	Freemium; subscription on $7.99/month	Freemium; subscription on up to $15.00/month < under 30, and varying rates based on age and location.	Freemium; subscription on $22.99/month	Freemium; subscription on 24.99/month
GPS	Yes – Proximity (≤ 100 miles)	Yes – Proximity Sort by Distance	Yes – Three location features (broadcasting, locals, and notifications)	Yes – Proximity (≤ 250 miles)	Yes – Proximity (≤ 100 miles)	Yes – Proximity (≤ 100 miles)	Yes – Proximity (≤ 250 meters)	Yes – Proximity (≤ 100 miles)

Table 1: Top mobile dating applications.[17] Note: Match, POF and OkCupid are included as a comprehensive

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15   Grindr. (2015). The world's biggest mobile network of guys. *Grindr.* Retrieved from: http://grindr.com/learn-more.

16   Quiroz, From finding the perfect love online to satellite dating and 'loving-the-one-you're-near'.

17   These five mobile dating apps were delineated as the most popular as of April 2018. This popularity and table includes references accumulated from the following sources – popular press, personal communication (Tinder – E. Bonnstetter, personal communication, March 15, 2018), and app sites (Bertoni, 2017; Bilton, 2014; Markowitz, 2017; Segel, 2017; Seppala, 2017; Tepper, 2017; Windle & Newton, 2018).

This chapter initially focused on the top five mobile dating apps; however, participants utilized many

representation from participants' responses that received over two percentage. Commonalities amongst
these five platforms — Android, iOS compatible, Facebook authentication, user eligibility 18 years or older.

Channel Affordances

When selecting to download and use an internet-based platform, users must consider the
platform affordances and their individual motivations. Originally, affordances were defined
as attributional traits that individuals perceived with a particular object and they varied
from abstract to applicative, depending on the field of study. Thus, affordances existed as
interactions between users and technology. This interaction is evidenced in a subjective
perspective (as a utility) by the user, and the technology exhibits affordances as evidenced by
its objective qualities.[18] Affordances are treated as homogeneous characteristics across media
that influence message processes.[19] Interplay develops between the intersectionality of user
and technology, and perceived social affordances can alter communicative practices. Fox and
McEwan[20] indicated that situational factors related to context, the content of communication,
or relationship can easily influence communicators and perceptions as well as interactions
between user and technology. They developed a perceived social affordance scale that
examined eight communication channels (i.e., email, face-to-face, instant messaging,
phone, social networking sites, Skype video conferencing, Snapchat, and texting). Their newly
developed scale includes ten communicative affordances and offers the ability to understand
individuals' experience within communication channels.

This chapter utilizes the perceived social affordances to examine mediated dating platforms
and the affordances that accompany dating apps — a topic neglected in prior research. In our
investigation, observable characteristics of dating apps will be used to determine the general
affordances of the format. The implications offer information for relational development and
communication initiation. The following research questions are posited:

RQ 1: What are the overall affordances for mobile dating applications (as a medium)?

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apps beyond the initial five mobile dating apps (similar to Chin & Edelstein, 2018). Participants
indicated using one (53.7%), two (29.3%), three (12.6%), four (2.4%), five (1.8%), and six (.2%)
different apps. The participants' familiarity on average included two apps (M = 1.70, SD = .93) and
utilized them on average 1.5 years (M = 36.18 months, SD = 37.14) and their experience ranged from a
few days to two decades.

Often users fluctuated in their usage and app deletion (see LeFebvre, 2018). Participants reported their
previous and current usage. Overwhelmingly, they used Tinder, then Bumble, and were followed by
CMB, Hinge, and Happn (only for previous use). Several other popular dating apps included Plenty of
Fish (POF), OkCupid, and Match, and all other apps reported less than 10%. See Table 2. When forced
to select their most frequently used, participants indicated Tinder and then Bumble, while all other
apps received less than 10%.

18   Schrock, A. R. (2015). Communicative affordances of mobile media: Portability, availability, locatability,
      and multimediality. *International Journal of Communication, 9,* 1229-1246. Retrieved from: http://ijoc.
      org/index.php/ijoc/article/viewFile/3288/1363.
19   Fox, J., & McEwan, B. (2017). Distinguishing technologies for social interaction: The perceived social
      affordances of communication channels scale. *Communication Monographs, 84,* 298-318. doi:10.1080
      /03637751.2017.1332418.
20   Fox & McEwan, Distinguishing technologies for social interaction.

RQ 2: What are the specific affordances for the top mobile dating applications?

User Motivation

In addition to the technological affordances specific to mobile dating apps, we investigate users' individual general and specific motivations. Recent research[21] examined motivations on mobile dating apps. Timmermans and DeCaluwe[22] developed and validated the 'Tinder Motives Scale'. Utilizing 'Uses and Gratifications' framework that assumed media viewers had an inherent set of needs that could be satisfied by the (older) media, and once satisfied, receivers experienced satisfaction or fulfillment.[23] This 'old media theory' experienced a resurgence in internet research.[24]

Building off older and newly refurbished Uses and Gratifications framework, Timmermans and DeCaluwe[25] developed a scale to assess motives for utilizing Tinder. They indicated that Tinder motives showed users employing this app as a pastime, out of curiosity, for socialization, and as an ego boost. The motives drove users to use media and the motives' gratifications led to continuous use. The 'Tinder Motives Scale' calls into question user motives on dating apps, applied explicitly to Tinder, or more broadly to any mobile dating app. As media choices involve strategic and purposeful decision-making, users have the ability to opt into media that matched their motivations. This chapter aims to determine whether these motivations are solely restricted to Tinder or apply to the format of mobile dating apps as a whole. While Tinder is a popular app that became almost a trademark for geo-location online dating it does not necessarily fully represent the whole gamut of internet dating services in terms of relationship type and clientele and does not even attract the majority of online daters.[26] Therefore, we pose the following research questions:

RQ 3: What are the overall motives for using mobile dating applications?

RQ 4: What are the specific motives for using the top mobile dating applications?

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21   e.g., Timmermans, E., & De Caluwe, E. (2017). Development and validation of the Tinder Motives Scale (TMS). *Computers in Human Behavior, 70,* 341-350. doi:10.1016/j.chb.2017.01.028; Timmermans, E., De Caluwe, E., Alexopoulos, C. (2018). Why are you cheating on Tinder? Exploring users' motives and (dark) personality traits. *Computers in Human Behavior, 89,* 129-139. doi:10.1016/j.chb.2018.07.040.

22   Timmermans & De Caluwe, Development and validation of the Tinder Motives Scale (TMS).

23   Katz, E., Blumler, J. G., & Gurevitch, M. (1974). Utilization of mass communication by the individual. In J. G. Blumler & E. Katz (Eds.). *The uses of mass communications: Current perspectives on gratifications research* (pp. 19-32). Thousand Oaks, CA: SAGE.

24   see Alhabash, S., & Ma, M. (2017). A Tale of four platforms: Motivations and uses of Facebook, Twitter, Instagram, and Snapchat among college students. *Social Media + Society, 3*(1). doi:10.1177/2056305117691544; Ruggiero, T. E. (2000). Uses and Gratifications theory in the 21st century. *Mass Communication & Society, 3,* 3-37. doi:10.1207/S15327825MCS0301_02; Sundar, S. S., & Limperos, A. M. (2013). Uses and Grats 2.0: New gratifications for new media. *Journal of Broadcasting and Electronic Media, 57,* 504-525. doi:10.1080/08838151.2013.845827.

25   Timmermans & De Caluwe, Development and validation of the Tinder Motives Scale (TMS).

26   Smith, 15% of American adults have used online dating sites or mobile dating sites.

Channel Affordances & User Motivation

Prior scholarship examined channel affordances and user motivations separately, neglecting their intersecting influence on selection and intentions. This chapter explores associations between channel affordances and user motivations both at the format level (e.g., dating apps) and with regards to specific apps (e.g., Tinder, Bumble, etc.). Thus, the following question is posited:

RQ 5: What is the relationship between dating application affordances and user motivations?

Method

RECRUITMENT

The participants were recruited from Amazon's Mechanical Turk (*MTurk*), an online crowdsourcing platform, wherein workers complete human intelligent tasks for nominal fees. *MTurk* system yields numerous advantages including a more diverse sample of participants.[27] Once selected, participants were provided with a Qualtrics link to complete an online survey in September 2018. Eligibility criteria included: age requirement (18 years or older), residency (U.S.), language (English). Also, participants were asked if they were (1) familiar with dating apps, (2) utilized in the past six months, and (3) used least a total of 10 hours. Eligible participants then read the approved Institutional Review Board informed consent form and agreed to participate. Participants who completed all questions and scales were included (over 97%). On average, participants completed the survey in 15 minutes.

PARTICIPANTS

The participants (N = 451) age ranged from 18 to 76 (M = 33.06, SD = 9.55). They identified gender as 50.8% male, 49% female, and .2% gender variant (nonconforming). Participants' ethnicities included: 71% Caucasian, 11.5% Black or African American, 5.8% Native American, 4.9% Asian or Pacific Islander, 3.8% Latino/a or Hispanic, 2.6% multiple races, and .4% Middle Eastern. Education varied: 42.9% Baccalaureate, 22.4% Masters, 17.1% Associates, 14.2% High School Diploma/GED Equivalent, 2.7% Doctorate, 0.4% vocational, and 0.2% eighth grade education. They resided in 44.6% suburban, 33% urban, and 22.4% rural.

The participants' sexual orientations included 44.4% only women, 32.5% only men, 6.6% women/men, 2.6% women/cis women, and 1.3% all genders but cis women. The remaining percentages (12.6%) represented one or two responses from a multitude of gender preferences.[28] Participants noted their first romantic relationships on average began when

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27 Buhrmester, M., Kwang, T., & Gosling, D. S. (2011). Amazon's Mechanical Turk. A new source of inexpensive, yet high quality data? *Perspectives on Psychological Science, 6,* 3-5. doi:10.1177/1745691610393980.
28 The multitude of gender options included: androgynous, bigender, cis men, cis women, genderfluid,

they were 17 years old (M = 17.26, SD = 3.74) ranging from 10 to 40 years old. The participants on average experienced seven romantic relationships (M = 7.16, SD = 8.69) ranging from zero to 100. They indicated approximately four committed romantic relationships (M = 3.71, SD = 5.87) ranging from zero to 90. Current relationship status varied from: 23.75% not in a relationship, 16.9% casually dating (one-person), 16.4% (committed to one-person), 15.5% married, 14.6% casually dating (multiple people), 2.4% never in a relationship, 1.8% divorced, 1.8% other (open relationships), and 0.4% widowed.

PROCEDURES

The participants responded to demographic questions (i.e., age, sex, sexual orientation, relationship status, educational status, geographical location, etc.) and were asked questions about their dating app usage. They were asked which dating apps they had previously, currently, and frequently utilized (and why). Open-ended questions examined general and specific responses from participants' perspectives as mediated dating users and the closed-ended questions used pre-established affordance scales.[29] The participants answered questions about their personal preferences (i.e., gender preference, age set, etc.). Before completing the two scales, 'Perceived Social Affordances of Communication Channel Scale' and 'Tinder Motives Scale', participants answered which app they utilized the most (from the five selected apps). The scales were randomly ordered. Then participants responded to questions about their pre-interaction and communication via mobile dating apps. Lastly, they were thanked and compensated via *MTurk*. No debriefing took place.

MEASUREMENTS

Perceived Social Affordances of Communication Channel Scale. This scale[30] consists of 64 items and measures 10 factors – accessibility, anonymity, bandwidth, conversation control, editability, network association, persistence, personalization, privacy, and social presence – in order to assess a broad range of perceived affordances across communication channels. The participants responded using a seven-point Likert scale (1 = Strongly Disagree to 7 = Strongly Agree). We modified the channel label prompt to improve readability and specification. Cronbach's α was 0.91 (M = 4.81, SD = .72).

Tinder Motives Scale. This scale[31] employed 58 items that measured 13 motive factors – belongingness, curiosity, distraction, ex, flirting/social skills, pastime/entertainment, peer pressure, relationship seeking, sexual experience, sexual orientation, social approval, socializing, and traveling. Participants responded to the following prompt, 'I use this app…'

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genderqueer, gender conforming, hijra, intersex, non-binary, pangender, transfeminine, transgender, transmasculine, transmen, transwomen, two spirit, and other option.

29   e.g., Fox & McEwan, Distinguishing technologies for social interaction.

30   Fox & McEwan, Distinguishing technologies for social interaction.

31   Timmermans & De Caluwe, Development and validation of the Tinder Motives Scale (TMS).

using a seven-point Likert scale (1 = Strongly Disagree to 7 = Strongly Agree). Cronbach's α was 0.96 (M = 4.93, SD = .54).

Results

We start with descriptive statistics to explore patterns and trends amongst affordances and motivations.
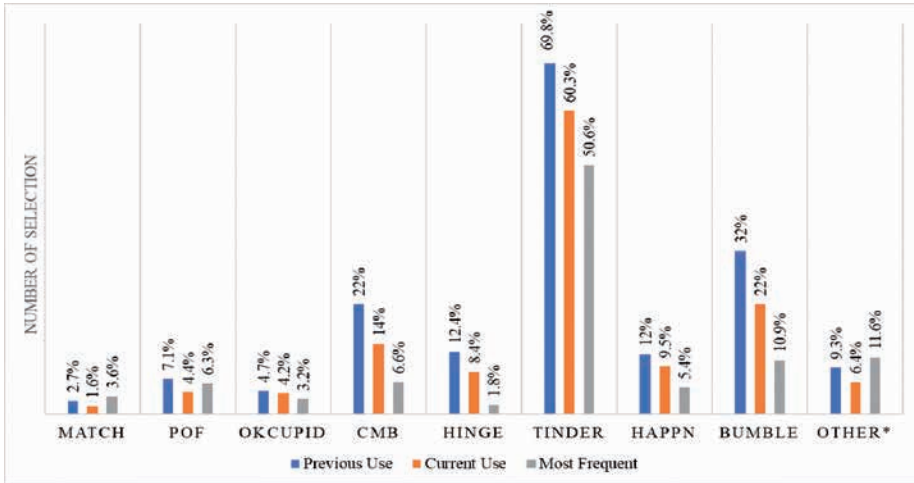

Table 2: Previous, current, and most frequent online dating services use. Note: Other refers to responses (reporting less than 2%): About Men, Ashley Madison, Badoo, Black People Meet, Cybercupido, Dating (Facebook), eHarmony, Farmers Only, Grindr, Her, The League, Love App, Mingles, Pure, Silver Singles, Skout, Yesca, and Zoosk.

RESEARCH QUESTIONS 1 & 2

Overall 'accessibility' (M = 5.65, SD = .90) achieved the highest affordance rating for all but one of the apps. The second overall affordance, 'conversation control' (M = 5.43, SD = .98), referred to the ability to manage interaction mechanics (e.g., initiate, regulate, turn-take, dissolve). The third overall affordance, 'informational control' (M = 5.16, SD = 1.00), depicted how much content was disclosed whether as incremental or selective disclosure. When creating and establishing first impressions and uncovering information about another person, each must engage in self-disclosure. Conversation and informational control intersected as essential elements for any relationship. The fourth affordance, 'editability' (M = 5.14, SD = 1.04), allows users to craft and modify their communication. The fifth affordance, 'personalization' (M = 5.13, SD = .85), enabled users to direct specific messages at intended users, playing on the notion of personalized interpersonal messages in a mass communication broadcast. Accessibility, conversation control, informational control, editability, and personalization were the highest ranking overall perceived social affordances for mobile dating apps (see Table 3 and 4).

Utilizing the 'Perceived Social Affordances of Communication Channel Scale', participants answered questions about their most frequently used (current) mobile dating app. Since Tinder represented the most frequently utilized app, general affordances aligned with Tinder users. However, when examining specific affordances of other mobile dating apps, each branded itself to draw in particular audiences that adhered to their desired relationship communication or partners. For instance, POF and OkCupid had higher personalization ratings perhaps because these apps offer the ability to reach a wider variety of sexual orientations. Additionally, Happn operated on proximity highlighted network association or connectivity to other users and had the lowest usage by participants. Overall affordances offered limited variations, and nuances specialized in users' preferences.

	Total	Tinder	Bumble	CMB	POF	Happn	Match	OkCupid	Hinge
Accessibility	5.65	5.60	5.63	5.59	6.05	5.62	5.71	5.70	5.33
	(.90)	(.98)	(.91)	(.64)	(.64)	(.75)	(.89)	(1.00)	(1.29)
Conversation	5.43	5.35	5.33	5.54	5.91	5.47	5.38	5.23	4.81
Control	(.98)	(1.03)	(.91)	(.72)	(.66)	(.80)	(1.25)	(1.55)	(1.24)
Information	5.16	5.11	5.09	5.31	5.47	5.28	4.74	4.83	4.95
Control	(1.00)	(.98)	(1.15)	(.79)	(1.02)	(.81)	(1.14)	(1.58)	(1.43)
Editability	5.14	5.00	5.20	5.23	5.68	5.57	4.94	4.77	4.38
	(1.04)	(1.00)	(1.19)	(1.00)	(.94)	(.74)	(1.20)	(1.50)	(1.35)
Personalization	5.13	5.04	5.14	4.90	5.70	5.02	5.15	5.50	5.00
	(.85)	(.86)	(.79)	(.63)	(.86)	(.71)	(1.70)	(1.13)	(.97)
Bandwidth	5.09	4.95	5.09	5.38	5.28	5.75	4.76	4.34	4.82
	(1.11)	(1.10)	(1.12)	(.70)	(1.12)	(.69)	(1.15)	(1.31)	(1.70)
Social Presence	4.69	4.68	4.65	4.78	4.85	5.05	4.56	4.03	4.10
	(.91)	(.92)	(.94)	(.63)	(.99)	(.57)	(.94)	(1.31)	(1.18)
Persistence	4.67	4.60	4.51	4.43	5.38	4.43	4.85	5.37	4.50
	(.88)	(.86)	(.67)	(.57)	(1.11)	(.31)	(1.16)	(1.06)	(.51)
Privacy	4.59	4.59	4.52	4.29	5.01	4.47	4.66	4.67	4.03
	(.71)	(.75)	(.65)	(.45)	(.78)	(.42)	(.70)	(.88)	(.67)
Anonymity	4.41	4.40	4.53	4.62	4.49	4.96	3.82	3.05	4.05
	(1.08)	(1.07)	(1.02)	(.79)	(1.34)	(.54)	(1.06)	(.90)	(.99)
Synchronicity	4.38	4.39	4.39	4.48	4.21	4.44	4.35	4.13	4.24
	(.47)	(.47)	(.38)	(.37)	(.59)	(.25)	(.67)	(.77)	(.48)
Network	4.23	4.20	4.61	4.95	3.01	5.63	3.68	2.41	4.40
Association	(1.56)	(1.47)	(1.54)	(1.06)	(1.65)	(.71)	(1.48)	(1.06)	(1.72)
	451	223	48	29	28	24	16	14	8

Table 3: General and specific mobile dating application affordances mean and standard deviations. Note: See Fox and McEwan (2018) for perceived social affordance definitions.

	Total	Tinder	Bumble	CMB	POF	Happn	Match	OkCupid	Hinge
1	Accessibility	Accessibility	Accessibility	Accessibility	Accessibility	Bandwidth	Accessibility	Accessibility	Accessibility
2	Conversation Control	Conversation Control	Conversation Control	Conversation Control	Conversation Control	Network Association	Conversation Control	Personalization	Personalization
3	Information Control	Information Control	Editability	Bandwidth	Personalization	Accessibility	Personalization	Persistence	Information Control
4	Editability	Personalization	Personalization	Information Control	Editability	Editability	Editability	Conversation Control	Bandwidth
5	Personalization	Editability	Information Control	Editability	Information Control	Conversation Control	Persistence	Information Control	Conversation Control
6	Bandwidth	Bandwidth	Bandwidth	Network Association	Persistence	Information Control	Bandwidth	Editability	Persistence
7	Social Presence	Social Presence	Social Presence	Personalization	Bandwidth	Social Presence	Information Control	Privacy	Network Association
8	Persistence	Persistence	Network Association	Social Presence	Privacy	Personalization	Privacy	Bandwidth	Editability
9	Privacy	Privacy	Anonymity	Anonymity	Social Presence	Anonymity	Social Presence	Synchronicity	Synchronicity
10	Anonymity	Anonymity	Privacy	Synchronicity	Anonymity	Privacy	Synchronicity	Social Presence	Social Presence
11	Synchronicity	Synchronicity	Persistence	Persistence	Synchronicity	Synchronicity	Anonymity	Anonymity	Anonymity
12	Network Association	Network Association	Synchronicity	Privacy	Network Association	Persistence	Network Association	Network Association	Privacy

Table 4: Rank order general and specific mobile dating application affordances.

RESEARCH QUESTIONS 3 & 4

Utilizing the 'Tinder Motives Scale', the participants answered questions about their most frequently (current) used mobile dating app. Overall, the participants chose to utilize this medium to 'socialize' (M = 5.57, SD = 1.61), meet new people, make new friends, connect to potential partners, and broaden their social network. A close second motive, 'relationship seeking' (M = 5.56, SD = 1.62), related to relationship development whether developing an emotional connection, finding a date, falling in love, creating a long-term committed relationship, or fostering a marriage. Tinder and other mobile dating apps subscribe to scripts and behaviors involving sex. Next, 'curiosity' (M = 5.45, SD = 1.82) and 'passing time' (M = 5.40, SD = 1.65) related to inquisitiveness and entertainment. Socializing, relationship-seeking, curiosity, and passing time were the highest-ranking overall motives for mobile dating apps (see Table 5).

Utilizing the 'Tinder Motives Scale', participants answered questions about their most frequently (current) used mobile dating app (see Table 6). Immediately, a connection is established between two interested individuals. Individuals' preferences allow the ability to opt into different apps. For instance, sexual orientation and travelling highlight connecting, meeting, and communicating with people of the same sexual orientation in new spaces or

physical locations. Happn allows for proximate acquaintances, whereby users travelling between places can inclusively and safely determine similar sexual orientation preferences and interested partners. This motivation increases potential interactions and negates uncomfortable situations from those uninterested. Similarly, sexual experience ranked highest for users of Happn and CMB. Happn enabled opportunities for the other motives; however, on CMB women initiated the communication. Thereby, communication and motives may differ based on built-in pre-assumptions. Specific motives prompt individual users to select their app to empower their preferences and desires.

	Total	Tinder	Bumble	CMB	POF	Happn	Match	OkCupid	Hinge
Socializing	5.57	5.50	5.41	5.39	5.59	6.30	4.97	5.04	4.94
	(1.61)	(1.69)	(1.76)	(1.29)	(1.36)	(.98)	(1.43)	(2.27)	(1.84)
Relationship Seeking	5.56	5.17	5.91	6.28	6.05	6.34	6.21	6.10	6.00
	(1.62)	(1.78)	(1.63)	(.91)	(1.15)	(.84)	(1.18)	(1.37)	(1.77)
Curiosity	5.45	5.50	5.49	5.79	4.86	5.94	5.21	3.81	5.83
	(1.82)	(1.86)	(1.70)	(1.49)	(1.72)	(1.41)	(2.20)	(1.82)	(1.22)
Pass Time	5.40	5.45	5.38	5.21	4.90	6.06	4.79	4.48	5.73
	(1.65)	(1.51)	(1.85)	(1.89)	(1.88)	(.94)	(2.00)	(2.34)	(1.74)
Social Approval	5.08	5.15	4.98	5.51	4.20	5.94	4.53	3.77	5.52
	(1.82)	(1.85)	(2.00)	(1.43)	(1.71)	(.98)	(1.84)	(1.81)	(1.41)
Flirting	5.06	5.02	4.8	5.61	4.37	6.02	4.10	4.29	5.27
	(1.64)	(1.66)	(1.75)	(1.43)	(1.49)	(.98)	(1.68)	(1.54)	(2.02)
Sexual Orientation	5.04	4.84	4.76	5.33	4.95	5.83	4.94	5.17	5.29
	(2.14)	(2.18)	(2.06)	(1.78)	(2.64)	(1.06)	(2.60)	(2.45)	(1.61)
Distraction	4.72	4.74	5.09	5.07	3.45	6.11	4.23	3.50	4.17
	(2.02)	(1.95)	(2.00)	(1.78)	(2.24)	(.96)	(1.99)	(2.30)	(1.76)
Sexual Experience	4.43	4.46	4.14	5.04	2.77	6.05	3.60	3.12	4.25
	(2.02)	(1.96)	(2.15)	(1.84)	(1.70)	(.93)	(2.07)	(1.97)	(2.22)
Ex	4.43	4.26	4.30	5.44	4.00	5.93	4.40	2.74	4.21
	(2.24)	(2.28)	(2.12)	(1.91)	(2.12)	(1.52)	(2.27)	(1.75)	(2.00)
Peer Pressure	4.35	4.34	4.40	5.52	3.11	5.65	4.06	2.19	4.50
	(2.10)	(2.00)	(2.06)	(1.68)	(1.98)	(1.50)	(2.12)	(1.45)	(1.94)
Travelling	4.24	4.10	4.63	5.12	2.66	6.08	3.73	3.20	4.78
	(2.12)	(2.01)	(2.29)	(1.94)	(1.88)	(1.07)	(2.03)	(2.54)	(1.80)
Belongingness	4.17	4.20	4.13	5.22	2.26	6.06	3.61	1.86	4.59
	(2.13)	(1.98)	(2.31)	(2.07)	(1.63)	(1.09)	(1.82)	(1.18)	(2.46)
	450	222	48	29	28	24	16	14	8

Table 5: General and specific mobile dating application user motives mean and standard deviations. See[32] for scale definition and explication.

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32 Timmermans, De Caluwe & Alexopoulos, Why are you cheating on Tinder?.

1	Socializing	Socializing	Relationship Seeking	Relationship Seeking	Relationship Seeking	Relationship Seeking	Relationship Seeking	Relationship Seeking	Relationship Seeking
2	Relationship Seeking	Curiosity	Curiosity	Curiosity	Socializing	Socializing	Curiosity	Sexual Orientation	Curiosity
3	Curiosity	Pass Time	Socializing	Flirting	Sexual Orientation	Distraction	Socializing	Socializing	Pass Time
4	Pass Time	Relationship Seeking	Pass Time	Peer Pressure	Pass Time	Travelling	Sexual Orientation	Pass Time	Social Approval
5	Social Approval	Social Approval	Distraction	Social Approval	Curiosity	Pass Time	Pass Time	Flirting	Sexual Orientation
6	Flirting	Flirting	Social Approval	Ex	Flirting	Belongingness	Social Approval	Curiosity	Flirting
7	Sexual Orientation	Sexual Orientation	Flirting	Socializing	Social Approval	Sexual Experience	Ex	Social Approval	Socializing
8	Distraction	Distraction	Sexual Orientation	Sexual Orientation	Ex	Flirting	Distraction	Distraction	Travelling
9	Sexual Experience	Sexual Experience	Travelling	Belongingness	Distraction	Curiosity	Flirting	Travelling	Belongingness
10	Ex	Peer Pressure	Peer Pressure	Pass Time	Peer Pressure	Social Approval	Peer Pressure	Sexual Experience	Peer Pressure
11	Peer Pressure	Ex	Ex	Travelling	Sexual Experience	Ex	Travelling	Ex	Sexual Experience
12	Travelling	Belongingness	Sexual Experience	Distraction	Travelling	Sexual Orientation	Belongingness	Peer Pressure	Ex
13	Belongingness	Travelling	Belongingness	Sexual Experience	Belongingness	Peer Pressure	Sexual Experience	Belongingness	Distraction

Table 6: Ranked general and specific mobile dating application user motives.

RESEARCH QUESTION 5

The findings offer a picture of the highest ranking perceived social affordances and users' motivations. The correlations demonstrate significant moderate or small positive relationships for conversation control, informational control, and editability with motives for socializing. Many people utilized access to other users as an opportunity to seek interpersonal relationships, whether romantic or platonic. The ability to socialize (motive) involved affordances that offered control over information exchanges, $(r(449) = .31, p < .001)$, allowed for varying breadth and depth of disclosures, $(r(447) = .32, p < .001)$, and modified communication flow, $(r(449) = .31, p < .001)$.

Discussion

The findings offer insight into how motives and affordances might simultaneously influence interaction, message production, and message processes. The selection of a dating app empowers users to determine in which mediated location and space to observe potential partners, thus offering the ability to anticipate relationship initiation or communication consciously. Dating apps users have clear expectations surrounding the potential to interact with two primary motives, socialization and relationship-seeking. However, while relationship

initiation and development may not be initially motivated to include sexual interactions, that reason may accompany multifaceted goals.[33]

The most apparent conceptual implications offer similarities and differences across and within the dating app channel. We found that users of online dating websites and apps desire accessibility, conversation control, and information control. Channel affordances offer access to textual and visual components for message exchange that are often ephemeral (especially if matches do not occur). Other channels highlight mixed findings— phone or video conferencing emphasized personalization, bandwidth, and conversational affordances; Facebook and email contained accessibility, persistence, and editability. Mobile dating apps uniquely differentiate themselves from other channels.

Because dating apps may offer pre-interaction practices and change communication initiation message productions, users must be cognizant of self-presentation branding, their selection-process, affordances for initial communication, and opportunities to turn-take, generating subsequent communicative exchanges, and modality switch. These challenges are not all available or transferable across dating apps. Users may not understand the unique affordances integrated by particular brands and neglected by others.

Limitations & Future Directions

Overwhelmingly, the findings reflect the way Tinder's affordances and motives - although ranked only ranked fifth in number of users in the USA behind Badoo, CMB, Bumble, and eHarmony[34] — can be found in these apps and other internet dating services.[35]

As the acceleration of online dating technology continues, channel affordances offer a springboard to a moving horizon that continues to warrant further consideration and adaptation. This multifaceted communicative, relational, and technological approach offers implications for scholars, practitioners, and students by extending research in mediated interpersonal communication. Examining channel affordances, while also exploring user motivations, offers an exploratory discussion to assist those interested in determining which mediated dating service may best serve their motives and channel interests. As popularized outlets rank order apps to guide users, they prompt the question:

Mirror, mirror on the wall,

Which app is the fairest of them all?

Many — And depends on who is asking.

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33   LeFebvre, Swipe me off my feet.
34   Statista. (2018). *Online dating.* Retrieved from: www.statista.com.
35   LeFebvre, Swipe me off my feet.

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6: THE SOCIAL EXCHANGE FRAMEWORK AND DIME DATING

ARRINGTON STOLL

The internet is so entwined in our everyday life and is a popular place for individuals to meet romantic partners. Previous research reports that nearly half of college students know someone who married or entered a long-term relationship with a partner whom s/he met online and 80% of those using online dating describe the process as a good way to meet people.[1] Online dating altered the landscape of modern courtship for many singles because of the resources available that expand the pool of eligible mates. Current online dating contexts present researchers with a unique way to study interpersonal relationships beginning online and then continuing to face-to-face. In this paper dime dating is addressed as a unique form of dating wherein some initial terms of compensation, monetary or otherwise, serve as a hurdle to initiating a dating relationship.

In some ways 'dime dating' involves thinking of dating as an economic transaction. As such, it provides an enticing alternative to traditional online dating websites. Dime dating involves one individual receiving compensation for going on a date.[2] Compensation may include monetary bidding for a first date, the exchange of goods such as vacations, or the negotiation of generous support for a mutually beneficial relationship. While interpersonal interactions are traditionally guided by the calculations of costs and rewards, dime dating, a new controversial approach to meeting potential partners, changes the way individuals meet. This way is based more heavily on expectations prior to meeting a dating partner.

Interpersonal relationships involving the exchange of goods and services have been studied in Asian cultures under the name, 'compensated dating'[3] and are associated with terms such as teenage sex work[4] or casual teen prostitution.[5] However, the literature on costs and rewards within interpersonal interactions has not been concerned with monetary bidding and exchanging of goods and services for first dates (i.e., dime dating) in Western culture. With dime dating emerging as a new way to initiate dates, understanding this controversial form

1   Smith, A. (2016). *15% of American adults have used online dating sites or mobile dating apps.* Retrieved October 3rd, 2016 from http://www.pewinternet.org/files/2016/02/PI_2016.02.11_Online-Dating_FINAL.pdf.

2   Stoll, A., & Kulovitz, K. (2013, October). *"Escorts are not welcome.": A content analysis of online bidding for first dates.* Paper presented at the International Association for Relationship Research. Louisville, Kentucky.

3   Chu, C. S. K., & Laidler, K. J. (2016). Becoming a male client of compensated dating. *Deviant Behavior, 27*(1), 47-65. doi:10.1080/01639625.2014.983007.

4   Lam, O. W. (2003). Why did Enjo Kosai anchor in Taiwan but not in Hong Kong? Or the convergence of "Enjo" and "Kosai" in teenage sex work. *Inter-Asia Cultural Studies, 4*(2), 353-363. doi:10.1080/1464937032000113051.

5   Ho, J. (2003). From Spice Girls to Enjo Kosai: Formations of teenage girls' sexualities in Taiwan. *Inter-Asia Cultural Studies, 4*(2), 325-336. doi:10.1080/1464937032000113033.

of dating enables researchers to uncover how the calculations of costs and rewards motivate individuals to participate in this type of interpersonal relationship, and the perceptions of the modern dating scene. Using social exchange theory and the investment model unique contributions to this unstudied area can be offered.

The Mating Marketplace of Dime Dating

Dime dating, also known as for-profit dating, is an online dating site where the exchange of money, services, and gifts for time spent with attractive individuals occurs. Dime dating is altering the traditional ways of modern courtship as it skips the basic dating initiating stage because of the offer of money or tangible goods. Economic thinking can be used to support judgments about the 'goodness' of social actions such as understanding the mechanics of how individuals communicate and interact.[6] In other words, individuals analyze the tradeoffs made in dime dating relationships in every interaction by looking at what is given up in comparison to what is received.

The concept of a marketplace represents different aspects of life, including relationships such as dime dating. Boulding,[7] states that 'the concept of the market can be generalized to that of the opportunities open for selecting and switching reciprocity partners' (p. 812) and is seen through individuals meeting new people and initiating and ending relationships. An individual might stay with their partner and decide that the alternatives are not worth ending the relationship, while another individual might start dating someone new because of an imperfection with their previous partner. Imperfections in the marketplace range based on many different factors such as societal expectations, institutions, or taboos. Considering the concept of online dating as a 'marketplace' several websites are using the dime dating principles.

Emerging into the realm of online dating sites are now self-proclaimed 'dating auction' websites. Websites such as WhatsYourPrice.com, MissTravel.com, and SeekingArrangement. com all use the free market principles of supply and demand. Whether it is bidding on people for first dates, embarking on trips with attractive travelers, or developing mutually beneficial relationships, at the core it is economics in action. While traditionally the individuals providing the majority of the tangible rewards are wealthy and older—supporting younger individuals involves nothing revolutionary. However, the ease of forming the contractual service relationship and communicating about the exchange of money, tangible items, or services is changing the way individuals meet and agree upon first dates by resembling an online marketplace and essentially an interpersonal transaction.

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6   Boulding, K. (1977). Prices and other institutions. *Journal of Economic Issues, 11*, 809-921. doi:10.10 80/00213624.1977.11503486; Sacco, P. L., Vanin, P. & Zamagni, S. (2006). The economics of human relationships. In S. C. Kolm and J. M. Ythier (Eds.), *The handbook of the economics of giving, altruism, and reciprocity, Volume 1: Foundations - Handbooks in Economics* (pp.695-726). Amsterdam: North-Holland.
7   Boulding, Prices and other institutions.

Given the relational context, social exchange frameworks are relevant in dime dating relationships in order to further the understanding of why two people choose each other, and which person has more influence given the exchange of costs and rewards. The next section will discuss two specific social exchange frameworks with particular relevance to the online dating 'marketplace' and identify the hypotheses and research question.

Social Exchange Theory & The Investment Model

The most basic premise of any social exchange framework is that individuals remain in relationships only as the perceived rewards from the relationship exceed the perceived costs of continuing to participate in that relationship. Social exchange theory is one of the most common frameworks for researching close relationships; it emphasizes that the formation of relationship between humans is by the use of subjective cost-benefit analysis along with a comparison of alternatives.[8] Social exchange theory proposes the relationships individuals choose to create and maintain are the ones maximizing rewards and minimizing costs, therefore yielding the most profit. Rewards take many forms such as material goods (economic) or symbolic goods (attention, status, advice) and are defined as items that either have value or bring satisfaction and gratification to the individual.[9] Costs are any elements in a relationship that an individual may view as negative. In relationships, individuals conduct a cost-benefit analysis by evaluating the value of a relationship in terms of the potential rewards and costs. The process of calculating the worth of a relationship in potential rewards and costs is useful for predicting the overall value individuals place on the relationship. Individuals assess the value at the beginning of a relationship to decide whether the relationship is worth initiating. Individuals keep calculating the difference between rewards and costs as the relationship develops in order to maintain the relationship. Individuals gauge the acceptability of outcomes in a relationship using the comparison level and the comparison level of alternatives.[10] The comparison level is the expected rewards, and the comparison level of alternatives is the discernment of how the outcomes weigh in comparison to other alternatives. Therefore, the first three hypotheses are:

H₁: In dime dating relational satisfaction increases as the difference between rewards and costs increases.

H₂: In dime dating relational satisfaction increases as the difference between rewards and alternatives increases.

H₃: In dime dating relational satisfaction decreases as the difference between costs and quality of alternatives increases.

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8   Hand, L.S., & Furman, W. (2008). Rewards and costs in adolescent other-sex friendships: Comparisons to same-sex friendships and romantic relationships. *Social Development, 18*(2), 270-287. doi:10.1111/j.1467-9507.2008.00499.x.

9   Thibaut, J. & Kelley, H. (1959). *The Psychology of groups.* New York: John Wiley & Sons; Redmond, M.V. (2015). Social exchange theory. *English Technical Reports and White Papers,* https://lib.dr.iastate.edu/engl_reports/5/.

10   Thibaut & Kelley, *The Psychology of groups.*

Stemming from the traditional social exchange model is Rusbult's investment model.[11] While similar to social exchange theory, the investment model adds the variable of commitment. The investment model shifts the focus from why individuals like each other to how and why individuals stay together.[12] The investment model elaborates upon social exchange theory by saying that individuals use three categories to organize their thinking about the costs and rewards in relationships. According to this model, commitment is determined by satisfaction, investments made in the relationship, and the previously discussed comparison level of alternatives.[13] Research supports the investment model saying, the level of commitment to a person is influenced by satisfaction level, quality of alternatives, and investment size.[14] In addition, a meta-analysis conducted by Le and Agnew revealed that commitment is consistently predicted by satisfaction, investment, and quality of alternatives.[15] Nonetheless, there have been very few empirical studies that have compared other possible predictors of commitment to the explanatory power of the investment model. Therefore, the investment model variables may provide additional insight into the phenomenon of dime dating relationships. The research question is:

RQ[1]: Using the three variables in the investment model, will this be an acceptable description of the observed relationships in dime dating?

Next, the additional variable of commitment added by the investment model is the intent to persist in a relationship[16] and it depends on how satisfied the individual is with the costs and rewards present in the relationship, investment into the relationship and a comparison with other potential alternative relationships.[17] The variable of commitment represents the long-term orientation and feelings of attachment felt toward a relationship (Johnson, 1982).[18] If individuals view the relationship with a long-term perspective and feel more connected,

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11   Rusbult, C. (1980). Commitment and satisfaction in romantic associations: A test of the Investment Model. *Journal of Experimental Social Psychology, 16,* 172-186. doi:10.1016/0022-1031(80)90007-4; Rusbult, C. (1983). A longitudinal test of the investment model: The development (and deterioration) of satisfaction and commitment in heterosexual involvements. *Journal of Personality and Social Psychology, 45*(1), 101-117. doi:10.1037/0022-3514.45.1.101.

12   Rusbult, C. E., Agnew, C., & Arriaga, X. (2011). The investment model of commitment process. *Department of Psychological Sciences Faculty Publications,* Paper 26. http://docs.lib.purdue.edu/psychpubs/26/.

13   Rusbult, Commitment and satisfaction in romantic associations.

14   Rusbult et al., The investment model of commitment process.

15   Le, B., & Agnew, C. R. (2003). Commitment and its theorized determinants: A meta-analysis of the investment model. *Personal Relationships*, *10*(1), 37-57. doi:10.1111/1475-6811.00035.

16   Rusbult, C. E., Martz, J. M., & Agnew, C. (1998). The Investment Model scale: Measuring commitment level, satisfaction level, quality of alternatives, and investment size. *Personal Relationships*, *5*, 357-391. doi:10.1111/j.1475-6811.1998.tb00177.x.

17   Sprecher, S. (1988). Investment model, equity, and social support determinants of relationship commitment. *Social Psychology Quarterly, 51*(4), 318–328. doi:10.2307/2786759; Sprecher, S. (2001). Equity and social exchange in dating couples: Associations with satisfaction, commitment, and stability. *Journal of Marriage and Family, 63*(3), 599-613. doi:10.1111/j.1741-3737.2001.00599.x.

18   Johnson, M. P. (1982). Social and cognitive features of the dissolution of commitment to relationships. In Duck, S. (Eds.), *Personal relationships 4: Dissolving personal relationships* (pp. 51-73). New York: Academic Press.

there is a greater chance for the individuals to remain in the relationship and perform the necessary maintenance.

The level of commitment of an individual to a relationship is dependent on how satisfied the individual is about the costs and rewards present in the relationship, investment into the relationship, and a comparison with other potential alternative relationships.[19] The fewer the desirable alternatives to a relationship are, the greater the urge to invest in a particular relationship and thus greater commitment to the said relationship. At the beginning of the relationship, the time partners spend with each other is one of the basic forms of a potential investment. As a relationship progresses, further investment occurs through communication, energy, disclosed information, combining friend groups, or purchasing items together as well as other intrinsically or extrinsically investments. An individual's satisfaction increases when the relationship provides greater rewards with lower costs that exceed expectations.[20]

Overall, individuals enhance the relationship and become dependent on the relationship by feeling committed. The feeling of commitment occurs when satisfaction is present, alternatives do not compare to the current relationship, and when individuals are investing resources in the relationship. Therefore, the last hypotheses are:

H$_4$: Relational satisfaction from dime dating increases as the difference between investment and costs increases.

H$_5$: Relational satisfaction increases as the difference between investment loss and the quality of alternatives increases.

Method

PARTICIPANTS

Participants were recruited by email invitations sent to undergraduate courses at two Midwestern universities and network sampling and public announcements on various social media platforms. To take part in the study, persons were required to have used an online dating site in the past two years and be over 18 years of age. The final sample was composed of 212 persons with 16 self-identified as for-profit daters (individuals engaging in dime dating) and 196 self-identified as not-for-profit daters. The average participant demographics were 24 years of age, with an income level of $0-$19,999, in college, single, heterosexual, and Caucasian.

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19   Sprecher, Investment model, equity, and social support determinants of relationship commitment; Sprecher, Equity and social exchange in dating couples.
20   Rusbult, A longitudinal test of the investment model.

MEASURES

A Qualtrics online questionnaire containing items to measure costs, rewards, alternatives, investment size, satisfaction, commitment, and communication was presented to the participants after they had granted consent by clicking on the provided survey link participants were asked if they had used an online dating website. A positive answer prompted them to answer what type of website (traditional online dating or for-profit dating). Participants lacking experience with for-profit dating were directed to an adapted survey to address traditional online dating. Opening up the study to individuals who had not engaged in for-profit dating allowed for the examination of the questions more broadly and generated interesting and unexpected results for the comparison of the different forms of dating. However, the unequal size of individuals identifying as for-profit daters versus not-for-profit daters does present an obstacle for analysis which is further discussed in limitations.

In order to examine social exchange in online dating relationships, a measure previously used by Rusbult[21] was adapted to assess participants' rewards, costs, satisfaction, commitment, alternatives, investments, and communication. The questions were constructed to fit the language of everyday relationships, and dime dating was referred to as 'for-profit dating'. The only change between the for-profit dating survey and the general online dating survey using not-for-profit participants were the words 'for-profit dating' changed to 'online dating' in each question and is noted by [for-profit dating/online dating]. For each of the variables, the factor structure of the questions was examined. Factor (unweighted least squares) analysis procedures were completed on both for-profit and not-for-profit items for the purposes of identifying latent constructs and refining the measure.

Rewards. The rewards of the relationship were explained for participants as taking many forms such as material goods, money, attention, status, advice, or anything of value or that brought the participant satisfaction and enjoyment. Three concrete questions were designed to assess rewards. Two out of the three items contributed to a simple factor structure and met the minimum criterion of having a primary factor loading of .5 or above. Using the two included items, the mean score for the rewards scale on the for-profit dating survey was 3.16 ($SD = 1.40$) with a Cronbach's alpha of .94. The not-for-profit dating survey had a mean of 2.49 ($SD = 1.22$) and a Cronbach's alpha of .87.

Costs. The costs of the relationship were explained to participants as any real or perceived elements of the relationship that have a negative value to the participant. Costs could be in a variety of forms such as time, money, effort, etc. Three questions were designed to assess costs. Two out of the three items contributed to a simple factor structure and met the minimum criterion of having a primary factor loading of .5 or above. Using the two included items, the mean score for the cost scale on the for-profit dating survey was 3.06 ($SD = 1.26$) with a Cronbach's alpha of .88. The not-for-profit dating survey had a mean of 2.71 ($SD = .92$) and a Cronbach's alpha of .60.

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21   Rusbult, Commitment and satisfaction in romantic associations; Rusbult, A longitudinal test of the investment model.

Satisfaction. Participants responded to five questions regarding the level of satisfaction. All items contributed to a simple factor structure and met the minimum criterion of having a primary factor loading of .5 or above. The for-profit dating mean was 2.78 ($SD = 1.27$) with a Cronbach's alpha of .96. The not-for-profit dating mean was 2.50 ($SD = 1.24$) with a Cronbach's alpha of .94.

Commitment. Six questions were used to assess the level of commitment. Four out of the six items contributed to a simple factor structure and met the minimum criterion of having a primary factor loading of .5 or above. In the end, the commitment scale included four questions. The for-profit dating mean was 3.10 ($SD = 1.35$) with a Cronbach's alpha of .89. The not-for-profit mean was 2.57 ($SD = 1.38$) with a Cronbach's alpha of .90.

Alternatives. Five questions were used to assess the level of alternatives. Four out of the five items contributed to a simple factor structure and met the minimum criterion of having a primary factor loading of .5 or above. After the exclusion of one item, the mean for the for-profit dating survey was 3.83 ($SD = 1.18$) with a Cronbach's alpha of .85. The not-for-profit dating survey had a mean of 3.41 ($SD = 1.27$) and a Cronbach's alpha of .80.

Investments. Five questions measured the level of investment in their for-profit dating experience. All items contributed to a simple factor structure and met the minimum criterion of having a primary factor loading of .5 or above. The mean of the for-profit dating survey was 2.25 ($SD = 1.37$) and a Cronbach's alpha of .90. The not-for-profit dating survey mean was 2.04 ($SD = 1.26$) with a Cronbach's alpha of .88.

Communication. Five questions were used to assess how participants communicated in their for-profit relationship. All items contributed to a simple factor structure and met the minimum criterion of having a primary factor loading of .5 or above. The for-profit dating survey had a mean of 3.33 ($SD = .95$) and a Cronbach's alpha of .77. The mean for the not-for-profit dating survey was 3.38 ($SD = .99$) with a Cronbach's alpha of .84.

RESEARCH DESIGN

The data were analyzed for each hypothesis and research question using for-profit dating participants, not-for-profit dating participants and the combined total of all participants. The survey included positively-keyed and negatively-keyed items; the negatively-keyed items were reverse-scored before computing individuals' total scores and before conducting psychometric analyses. Reverse-scoring the negatively-keyed items ensured that all the items were consistent with each other, in terms of what an 'agree' or 'disagree' response implied and doing so created consistency. In addition, the discriminants were checked for each variable, and multicollinearity was not present.

First, the difference scores between each set of variables for hypotheses 1-5 were calculated. Second, for hypotheses 1-5 new variables were computed to show the difference between the items identified in the hypotheses (e.g., the difference between rewards and costs). The

hypotheses were then tested through the computation of the correlation between satisfaction and costs/rewards difference, rewards/alternatives difference, alternatives/costs difference, investments/costs difference, and investments/alternatives difference. For the research question, a multiple regression using the predictors of alternatives, investments, and satisfaction analyzed the investment model after removing the influence of demographics [biological sex, income, education level, relational status, sexual identity]. The last component in the investment model of probability of persistence was not tested.

Results

H1

The results show a mid-size positive correlation between participant's level of satisfaction and the reward/cost difference. The p value was less than .01 for not-for-profit participants: r (194) = .46; and all participants: r (210) = .44, indicating that the correlation is statistically significant. However, the results did not support the correlation between satisfaction and reward/cost difference with for-profit dating participants: r (14) = .15. The results indicate a mixed picture of the connection between the value of rewards and the costs in a relationship.

H2

The results show a large correlation between participant's level of satisfaction and the reward/alternative difference. The p value was less than .01 for not-for-profit participants: r (194) = .71; for-profit participants: r (14) = .75, and all participants: r (210) = .71, indicating that the correlation is statistically significant. The results indicate that as the value of rewards increases in the relationship relative to the value of alternatives available, individuals will be more satisfied in the relationship.

H3

The results show a large correlation between participant's level of satisfaction and the cost/alternative difference. The p value was less than .01 for, not-for-profit participants: r (194) = -.56; for-profit participants: r (14) = -.79; and all participants: r (210) = -.58, indicating that the correlation is statistically significant for all three groups. The results indicate that the satisfaction decreases as the difference between participant's quality of alternatives and costs increases.

H4

The results do not indicate a significant correlation for not-for-profit participants: r (194) = -.00; for-profit participants: r (14) = -.24; or for all the participants in the study: r (210) = -.01.

H5

The results show a moderate correlation between the level of satisfaction and the investment/alternative difference r (194) = .48; for-profit participants: r (14) = .65; and all participants: r (210) = .48. Daters' level of satisfaction increases as their investment in the relationship and quality of alternatives increases.

RQ1

This research question asked if the investment model variables will be an adequate description of the observed relationships. To answer this question, first, the relevant assumptions of this statistical analysis were tested. Second, a multiple regression analysis was conducted to evaluate how well alternatives, satisfaction, and investments predicted commitment.

The independent variables investment, alternative, and satisfaction explain 63.1% of the variability of the dependent variable commitment. In order to check the independence of observations, the Durbin-Watson test was used, resulting in a value of 2.002, which indicates no serial correlations. The overall regression model was tested to see if it was a good fit for the data. Further, the data was checked for multicollinearity using Tolerance and VIF values. All tolerant values were between 0.2 and 0.9, and VIF values were less than four. This further implies that the data does not show multicollinearity. The Cook's Distance was calculated to check for significant outliers. The Cook's Distance shows all variables were below 1, which indicates no outliers. The assumption of homoscedasticity was met by using a scatterplot of standardized residuals and visually checking the assumption. Lastly, a multiple regression was conducted to predict commitment. The results show that the independent variables statistically significantly predict the dependent variable $F_{(3, 185)}$ = 108.38, $p < 0.001$. The variables of satisfaction and investment were statistically significant ($p < .05$) to the prediction of commitment. However, alternatives did not predict commitment ($p = .74$). The regression equation for predicting commitment was:

Predicted Commitment = (0.372*satisfaction) + (-0.016*alternatives) + (0.504*investment)

Discussion

The first research hypothesis predicted an increase in relational satisfaction as the difference between costs and rewards increased. The correlation between relational satisfaction and the cost/reward difference for not-for-profit and the combination of all participants is consistent with the social exchange theory framework, where individuals enter a relationship because of the perceived gain in net values/benefits. In that context, the net gains (i.e., the difference between the costs and rewards) enhances the level of satisfaction with the relationship. According to the social exchange framework, as net gains increase, the level of satisfaction among participants increases as well, and this is consistent with the moderate positive

correlation found in this data. As explained by Rusbult,[22] individuals tend to report on more satisfaction in relationships when greater rewards are achieved with minimal costs, exceeding individual's expectations. Therefore, as the difference between costs and rewards increase, the overall satisfaction between individuals in a relationship should increase.

The second hypothesis predicted that as the difference between rewards and alternatives increased, relational satisfaction would also increase. The analysis indicates that as rewards increased in a relationship, relative to the alternatives an individual had outside of the relationship, individuals reported on more satisfaction with the existing relationship. In the investment model, Rusbult, Agnew, and Arriaga[23] clarify that individuals commit in a relationship because of fewer desirable alternatives to that relationship, which encourages investment and exhibiting greater commitment in their current relationship. The explanation remains consistent with the present study, when fewer alternatives to a relationship exist, relative to the rewards obtained in a relationship, individuals remain committed to the current relationship. Therefore, commitment comes after the individuals completed a cost/benefit analysis of the current relationship and their alternative relationships. Notably, relationship satisfaction is enhanced by the increase in the reward/alternative difference, as explained by the social exchange theory framework. As such, the results that confirm H2 are consistent with both the social exchange theory framework and the investment model.

The third hypothesis speculated that relational satisfaction would decrease when the difference between the costs and quality of alternatives increase. The findings support the hypothesis, concluding that satisfaction tends to decrease as the difference between participants' cost and quality of alternatives increases. As social exchange theory suggests, individuals start a relationship mainly because the perceived benefits of the relationship are greater than the costs. The social exchange framework demonstrates that relationships come into existence after the participating individuals conduct a cost/benefit analysis, comparing alternatives to ascertain whether the current relationship offers the best value (in terms of cost and benefits). To make a long story short, satisfaction with a current relationship improves as the quality of alternatives per unit of costs decreases.

In contrast to the expectations, the results failed to support the fourth hypothesis which stated that relational satisfaction would increase as the difference between investment loss and cost increases. The correlation results for the relationship between relational satisfaction and the difference between investment loss and cost does exist as predicted by the investment model. According to Rusbult, Drigotas, and Verette, investments are the 'resources that become attached to a relationship and would decline in value or be lost if the relationship were to end'.[24] The resources could involve the investment in housing, time spent, or even having children. On the other hand, costs refer to 'any factors that operate to inhibit or deter the performance

22   Rusbult, A longitudinal test of the investment model.
23   Rusbult et al., The investment model of commitment process.
24   Rusbult, C.E., Drigotas, S.M., & Verette. (1994). The investment model: An interdependence analysis of commitment processes and relationship maintenance phenomena. In D. Canary & L. Stafford (Eds.), *Communication and relational maintenance* (pp. 115-139). New York: Academic Press.

of a sequence of behavior'.[25] Thus, if a negative or conflicting consequence accompanies an action, the cost becomes high. In that context, since an increase in investment loss is a significant negative consequence in a relationship, the cost became high. As a result, the difference between investment loss and cost must increase in a relationship. The previous explanation explains why there was no significant correlation while testing hypothesis four. However, given the lack of significance in the results of this hypothesis, there was speculation as to the relationship solely between satisfaction and investments. A correlation analysis was used to examine whether a positive correlation exists between relationship satisfaction and the level of investment. The results indicated a positive correlation between relationship satisfaction and the level of investment loss in for-profit, not-for-profit, and all participants in the study. Therefore, just as satisfaction increases with net benefits, satisfaction would be greater as the loss diminishes from ending the relationship (investment loss).

The fifth hypothesis expected that the level of satisfaction would increase as the difference between alternatives and investments increase. The results remain consistent with a research finding compiled by Durko and Petrick,[26] which revealed similar correlations among satisfaction, commitment, and quality of alternatives; quality of alternatives and relationship satisfaction are good predictors of relationship commitment. Notably, the results indicate a significant correlation among for-profit participants. In that context, the conclusion is that increases in the difference between participants' investments in the relationships and the quality of alternatives lead to greater levels of satisfaction. Consistent with social exchange theory and the investment model, the relationships formed use individual cost-benefit analysis and a comparison of alternatives. Given the results, when the cost-benefit analysis indicates more gains in the current relationship than in an alternative relationship, the individual tends to perceive greater satisfaction.

Research question one tested the investment model using the variables of satisfaction, investment, and alternatives to establish the best estimators of commitment. The investment model is used to predict the probability of individuals to stay in a relationship. Consistent with the results from the research question, commitment is influenced by satisfaction, the quality of alternatives, and investments.[27] The findings indicate that the overall model was significant accounting for 63% of the variance in commitment. This result compares to past research identifying the three variables as collectively accounting for approximately 60% of the variance.[28] Independently, investment and satisfaction significantly predicted commitment while the variable of alternatives failed to explain a significant amount of the variation in commitment. However, consistent with past research which found the quality of alternatives to be inversely related to the commitment variable (Rhatigan & Axsom, 2006),[29] the results

25   Thibaut & Kelley, *The Psychology of groups,* p. 12.
26   Durko, A. M., & Petrick, J. F. (2016). Travel as relationship therapy: Examining the effect of vacation satisfaction applied to the investment model. *Journal of Travel Research*, *55*(7), 904-918. doi:10.1177/0047287515592970.
27   Rusbult et al., The investment model.
28   Le & Agnew, Commitment and its theorized determinants.
29   Rhatigan, D. L., & Axsom, D. K. (2006). Using the investment model to understand battered women's commitment to abusive relationships. *Journal of Family Violence*, *21*(2), 153-162. doi:10.1007/s10896-

of the current study suggest that participants identify the quality of the alternatives, but there is no direct impact on whether an individual is committed to staying in the relationship. We should note though that this result applies to all the participants in the study – for profit daters and not for profit daters – as it was statistically impossible to build a multiple regression model only for dime daters due to their small number.

Conclusion

The present study makes valuable contributions to the social exchange framework and the field of interpersonal communication by providing some insights into the emerging ways people are communicating free marketing principles in online dating and specifically dime dating relationships. Despite the merits of the current research, a few limitations exist in the study's research design and methodology.

The first potential limitation has to do with the nature of the subject matter. While discussing not-for-profit relationships in the current study remains fairly non-threatening, discussing for-profit relationships where goods and services are exchanged for time spent is a taboo topic. This may have created difficulty for participants to give open, honest answers and potentially an unwillingness to disclose their private life. Although anonymity was guaranteed, and definitions were provided as a guide for participants, of those who started the survey, only 64% answered all the questions. This may limit the ability to generalize the conclusions.

The second potential limitation stems from the number of participants. The current research study collected data from 212 individuals of which only 16 were for-profit daters. Clearly, this is a small group and by far smaller than the compared group of not for profit daters (n=196). When group sizes are unequal, the homogeneity of variance assumption may be compromised. Generally, statistical software like SPSS accounts for this automatically when selecting formulae for computations. However, there is no natural way of turning unequal to equal. Future research should seek to include a wider, more heterogeneous sample to represent demographic variables including cultural backgrounds and sexual orientations. In the present study, seven percent of the participants identified themselves as dime daters and in a for-profit dating relationship. While in some areas this may not be viewed as a large percentage of participants, the data were collected from participants in the Midwest where this might be surprising. For example, in Las Vegas where there is a perceived emphasis on youth, sex, and money, it is quite possible there is a difference in the number of people engaging in dime dating as compared to an area like rural Montana. Urban areas that have a higher density because of cultural issues, higher cost of living, or cities with students graduating with large amounts of debt, may attract more individuals who engage in dime dating relationships.

Lastly, the third potential limitation involved the methods used. Some participants may have found difficulty in understanding the questionnaire, despite the instructions which appeared at the top of each measure. Specifically, for the not-for-profit online dating participants, words like cost and rewards might seem unrelated to dating.

005-9013-z.

Guided by the theoretical framework of social exchange theory and the investment model, the findings may aid researchers in understanding how individuals maximize benefits while minimizing costs in the modern dime dating platforms. In addition, the findings can also contribute to a better design of online dating platforms by considering how individuals identify their needs, establish what they offer in return, understand the dating market, evaluate options and, lastly, pick the best fit as per their cost-benefit analysis.

The findings agree with the basic principle, according to which individuals are attracted to one another if the relationship offers resources and potential rewards. This is important in dime dating relationships because of the significant impact that the explicitness of rewards plays when initiating first dates. While the initial interaction is based on the free market principles, the investment model was able to highlight that rewards are not the only factor that contributes to an individual staying in the relationship. When an individual is satisfied and feels they have invested a great deal in the relationship, that individual is more likely to maintain the relationship and stay committed to their partner.

Dime dating is a unique type of controversial dating. One person possesses something the other values, and in the case of dime dating, it is explicitly stated. However, unlike traditional online dating, individuals choosing to participate in dime dating are engaging to an even greater extent in a communicative exchange wherein one calculates the costs and rewards. They consciously conduct a personal cost benefit analysis and comparison of alternatives to a greater extent than those who do so implicitly in more traditional dating arrangements.

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7: THE RELATIONSHIP BETWEEN ROMANTIC IDEALS AND ONLINE DATING STIGMATIZATION

ELISABETH TIMMERMANS AND CÉDRIC COURTOIS

Recently, various online dating platforms have gained ground as means to engage in romantic relationships.[1] Regardless of their increased popularity, such platforms are not unanimously considered as positive phenomena, given that such platforms are also known to encourage casual sexual interactions[2] and even infidelity.[3] Therefore, previous research points to varying grounds for the stigmatization of online dating, which entails both the negative appraisal of the practice of online dating and the negative stereotyping of its users. In general, online dating platforms are often perceived as overly artificial environments, frequented by desperate, socially inapt or even unreliable people.[4]

This study aims to investigate different grounds for stigmatization. Several researchers argue that online dating creates a shopping culture of daters,[5] in which online daters are more likely to reverse their partner choice or to continue their search for a (better) partner.[6] Notably, such market metaphor is in stark contrast with romantic beliefs in which the love interest is strongly idealized and a continued investment in a relationship is supposed to be able to buffer any obstacles it encounters.[7] We argue that the endorsement of such romantic beliefs

1   Rosenfeld, M. J., & Thomas, R. J. (2012). Searching for a mate: The rise of the Internet as a social intermediary. *American Sociological Review*, *77*, 523-547. doi:10.1177/0003122412448050.

2   Timmermans, E., & Courtois, C. (2018). From swiping to casual sex and/or committed relationships: Exploring the experiences of Tinder users. *The Information Society, 34*, 59-70. doi:10.1080/01972243. 2017.1414093.

3   Timmermans, E., De Caluwé, E., & Alexopoulos, C. (2018). Why are you cheating on Tinder? Exploring users' motives and (dark) personality traits. *Computers in Human Behavior*, *89,* 129-139. doi:10.1016/j. chb.2018.07.040; Wysocki, D. K., & Childers, C. D. (2011). "Let my fingers do the talking": Sexting and infidelity in cyberspace. *Sexuality & Culture*, *15*, 217-239. doi:10.1007/s12119-011-9091-4.

4   Finkel, E. J., Eastwick, P. W., Karney, B. R., Reis, H. T., & Sprecher, S. (2012). Online dating: A critical analysis from the perspective of psychological science. *Psychological Science in the Public Interest, 13*, 3-66. doi:10.1177/1529100612436522.

5   Best, K., & Delmege, S. (2012). The filtered encounter: Online dating and the problem of filtering through excessive information. *Social Semiotics, 22*, 237-258. doi:10.1080/10350330.2011.6484 05; Dröge, K., & Voirol, O. (2011). Online dating: The tensions between romantic love and economic rationalization. *Zeitschrift für Familienforschung, 23*, 337-357; Heino, R. D., Ellison, N. B., & Gibbs, J. L. (2010). Relationshopping: Investigating the market metaphor in online dating. *Journal of Social and Personal relationships, 27*, 427-447. doi:10.1177/0265407510361614.

6   D'Angelo, J. D., & Toma, C. L. (2017). There are plenty of fish in the sea: The effects of choice overload and reversibility on online daters' satisfaction with selected partners. *Media Psychology, 20*, 1-27. doi :10.1080/15213269.2015.1121827; Wu, P. L., & Chiou, W. B. (2009). More options lead to more searching and worse choices in finding partners for romantic relationships online: An experimental study. *Cyberpsychology & Behavior, 12*, 315-318. doi:10.1089/ cpb.2008.0182.

7   Sprecher, S., & Metts, S. (1989). Development of the Romantic Beliefs Scale and examination of the effects of gender and gender-role orientation. *Journal of Social and Personal Relationships, 6*, 387-411.

might conflict with the affordances of online dating platforms, which in essence create an abundance of partner choice.

In the following sections, we first draw briefly upon sociological literature on the history of romantic love and the practice of dating, which are both inherently tied to modernization processes. Next, the literature on stigma is briefly sketched and related to empirical research on online dating.

Romantic Love in the 21st Century

Despite its recent spread, romantic love as a precondition for enduring relationships appears deeply rooted within Western societies. In fact, the rise of romantic love has repeatedly been associated with the rational modernization of Western societies, although its roots were present much earlier in history, while present in a variety of cultures.[8] Key modernization theorists attribute the general diffusion of romantic love to social processes that eroded the impact of tradition on social relations, including secularization and individualization.[9]

From his perspective on reflexive modernization, Giddens[10] describes the transition of marriage from a practical, economic arrangement to a romantic relationship that idealizes emotional investment. He argues that starting in the late eighteenth century, romantic love became an integral part of the deliberate construction of the personal and flexible narrative of the self in Western societies. Giddens conceives romantic relationships as an intimate entanglement of biographies, rather than the aloof, socially dictated traditional marriage. Intrinsically, as argued by traditional sociologists such as Max Weber,[11] romantic love assumes an emotional counterweight to the rational mechanizations of modern capitalist societies. In a similar vein, Beck-Gernsheim and Beck[12] emphasize the value of romantic love as a source of support and security in modern societies in which the strongholds of tradition and religion erode. They even pinpoint romantic love as a latter-day religion, an ideology 'to counteract the perils of individualization. It lays stress on being different, yet promises togetherness to all those lone individuals'.[13] Whereas in the 19th century romantic love was cast within religious discourse, it slowly dropped its shackles and became a motive in itself. Foremost, it celebrates the association between partners, based on the intrinsic qualities of the durable emotional tie

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8   Jankowiak, W. R., & Fischer, E. F. (1992). A cross-cultural perspective on romantic love. *Ethnology, 31*, 149-155. doi:10.2307/3773618.

9   Lantz, H. R. (1982). Romantic love in the pre-modern period: A sociological commentary. *Journal of Social History, 15*, 349-370.

10   Giddens, A. (1992). *The transformation of intimacy: Sexuality, love and eroticism in modern societies.* Cambridge, UK: Polity.

11   Koch, A. M. (1993). Rationality, romanticism and the individual: Max Weber's "Modernism" and the confrontation with "Modernity". *Canadian Journal of Political Science/Revue canadienne de science politique, 26*, 123-144. doi:10.1017/S0008423900002481.

12   Beck-Gernsheim, E., & Beck, U. (1995). *The normal chaos of love.* Cambridge, UK: Polity.

13   Beck-Gernsheim & Beck, *The normal chaos of love,* p. 181.

that is formed by the relationship itself,[14] or what Giddens[15] refers to as the 'pure relationship': a relationship that allows for building personal happiness.

The disorientation that results from the erosion of traditionalism provoked by modernization nourished the need to seek stability in the quasi-feudal confinements of the nuclear family, while institutionalizing its gender roles. These roles got embedded in a set of constraining values that idealize the romantic ideology of a pure, instantaneous, yet enduring attraction to a unique person who is considered the one and only.[16] Utopian exemplifications of such romantic ideals have for decades been omnipresent in popular culture (e.g. fiction and advertising) and researchers suggest that romantic narratives in popular culture function as socialization agents for romantic beliefs.[17] Consequently, we are continually confronted with the ideological ideals of what a fulfilling relation should consist of, and how to obtain and maintain it.

However, social change affects these romantic ideals. Giddens[18] argues that the increasing autonomy provoked by economic and sexual emancipation from the 1960s onward, undermines the idealistic values of the romantic relationship and stimulates the deinstitutionalization of marriage, while enabling the acceptance of alternative forms of relationships.[19] Social change pressures the traditional dynamics of family life and professional inequalities, while increasing sexual openness, pursuing reproductive freedom, and eroding heterosexual norms.[20]

This brings about a novel cornerstone for relationships, i.e. *confluent love,*[21] which entails a love that equally combines the practical, emotional and sexual exigencies of contemporary relationships. It presumes partners' equal emotional investment and requires the openness to equally vent concerns and vulnerabilities. The gist of confluent love is that partners have increasingly gained the agency to individually define and develop their own interpretations of relationships and the requirements they hold. Yet, confluent love is extremely demanding. The egalitarian roles of partners introduce multiple demands that are no longer brushed away

14   Bawin-Legros, B. (2004). Intimacy and the new sentimental order. *Current Sociology, 52,* 241-250. doi:10.1177/0011392104041810.

15   Giddens, *The transformation of intimacy.*

16   Ben-Ze'ev, A., & Goussinsky, R. (2008). *In the name of love: Romantic ideology and its victims.* Oxford, UK: Oxford University Press.

17   Hefner, V., & Wilson, B. J. (2013). From love at first sight to soul mate: The influence of romantic ideals in popular films on young people's beliefs about relationships. *Communication Monographs, 80,* 150-175. doi:10.1080/03637751.2013.776697; Lippman, J. R., Ward, L. M., & Seabrook, R. C. (2014). Isn't it romantic? Differential associations between romantic screen media genres and romantic beliefs. *Psychology of Popular Media Culture, 3,* 128-140. doi:10.1037/ppm0000034.

18   Giddens, *The transformation of intimacy.*

19   Treas, J., Lui, J., & Gubernskaya, Z. (2014). Attitudes on marriage and new relationships: Cross-national evidence on the deinstitutionalization of marriage. *Demographic Research, 30,* 1495-1526. doi:10.4054/DemRes.2014.30.54.

20   Hekma, G., & Giami, A. (2014). Sexual revolutions: An introduction. In G. Hekma & A. Giami (Eds.), *Sexual revolutions* (pp. 1-24). Palgrave Macmillan, London.

21   Giddens, *The transformation of intimacy.*

by the idealized version of romantic love. Beck-Gernsheim and Beck[22] concur with this idea by arguing that partners in a relationship nowadays have to 'invent and pursue their common cause, that is to say, they have to fill up their free private space with compatible definitions of love and marriage'. They continue by emphasizing the tremendous effort, time and patience this requires, alongside the many risks for eventual failure and the challenges of love, passion, friendship, intellectual companionship, domestic chores, child rearing, etc., which altogether are hard to successfully combine.

Failure of such successful combination is a possible ground to terminate a relationship. For instance, research on reasons to part ways indicates that over two-thirds of a sample of Belgian respondents agree with the absence of passion, reciprocal attraction, or the inability to profoundly talk to each other as legitimate grounds to end a relationship. However, the same study indicates that four out of ten respondents tend to agree with the statement that love happens only once.[23] Hence, to a considerable extent, a Western society holds on to romantic values, despite the overwhelming evidence of their increasing failure. We cherish the utopian ideals of romantic love and try to reconcile them with our individualistic stance. Yet, we often fail to accomplish such combination.[24] This is exemplified by the increasing prevalence of failed relationships and marriages, alongside the rise of single households particularly in Europe.[25] Yet paradoxically, we persist in seeking fulfilling relationships, even after the disappointments of break-ups and divorce. Caught in a postmodern mindset, we strive to combine mundane practicalities with an exciting, individually gratifying emotional and sexual bond.[26] Research points out that even in a context of individualization, singles report unfavorable attitudes towards being single in contrast with having a steady relationship[27] and express the desire to eventually be involved in a steady relationship.[28]

Matchmaking: The Practice of Online Dating

In her elaborate socio-historical work on romantic love, Illouz[29] argues that courtship in the 19th century was tied to the privacy of the home, which was closely supervised by relatives (i.e. 'calling'). This was gradually replaced by 'dating', which became the dominant practice to get acquainted with a variety of potential romantic partners, before engagement or actual marriage. From the beginning of the 20th century onwards, increases in mobility and disposable income allowed romantic encounters to transform into playful, exciting experiences. The

22   Beck-Gernsheim & Beck, *The normal chaos of love*, p. 91.
23   Bawin-Legros, Intimacy and the new sentimental order.
24   Hull, K. E., Meier, A., & Ortyl, T. (2010). The changing landscape of love and marriage. *Contexts, 9*, 32-37. doi:10.1525/ctx.2010.9.2.32.
25   Eurostat (2016). *Marriage and divorce statistics.* Available at: http://ec.europa.eu/eurostat/statistics-explained/index.php/Marriage_and_divorce_statistics.
26   Illouz, E. (1997). *Consuming the romantic utopia: Love and the cultural contradictions of capitalism.* Berkley, CA: University of California Press.
27   Poortman, A. R., & Liefbroer, A. C. (2010). Singles' relational attitudes in a time of individualization. *Social Science Research, 39*, 938-949. doi:10.1016/j.ssresearch.2010.03.012.
28   White, N. R. (2003). Changing conceptions: Young people's views of partnering and parenting. *Journal of Sociology, 39*, 149-164. doi:10.1177/00048690030392003.
29   Illouz, *Consuming the romantic utopia.*

activities were fueled by various kinds of leisure consumption, such as going out to see a movie or visit a dance hall. This meant profound change as dating became a cornerstone of youth culture, combining entertainment with emerging forms of sexual freedom, which lend dating a sporadic, casual character. It would become commonplace to consecutively date multiple potential partners, for a longer period of time.[30]

However, this does not imply that dating became devoid of social rules. In fact, there is a broad literature on dating scripts, emphasizing the influence of socio-cultural norms on the ritualistic practice of dating. This body of research has consistently indicated conservative, gendered influences concerning expectations and role taking in the course of dating.[31] However, dating is not the exclusive domain of relationship formation, as more informal forms of getting together, such as leisure activities in larger social groups, are equally present.[32] Furthermore, recently we notice the rise of alternative practices, such as hooking up and casual sexual relationships. The former refers to sexual encounters between two strangers without any rules or expectations towards a committed relationship.[33] The latter refers to frequent sexual encounters between acquaintances or friends, without attributing romantic qualities to the relationship.[34]

There has been a clear shift towards increased openness in the choice and the circumstances to establish and try out romantic relationships. The range of possible partners equally increased, as did the places to encounter them. Research points to an evolution in the kind of venues that afford meeting potential romantic partners. A French study based on over 10,000 respondents aged 18 to 69 indicates that the meeting place of their *first* romantic partner shifted away from public dances (25% in 1960s, 1% in the 2000s). The familial and neighborhood context also diminished as sources of first romantic partners, in favor of various kinds of leisure venues such as nightclubs and parties. Schools likewise gained importance over time (11% in the 1980s, 18% in the 2000s).[35] American research directed at how one met his or her *current* partner yields similar results. Foremost, there is a monotonous decline in the status of the family to meet a current partner. Informal networks on the other hand remained essential through the past decades (i.e., meet through friends, about 30% in 2010). The same holds up for meeting in leisure spaces such as a bar or restaurant. Importantly, the data show a steep incline in a relatively novel form of meeting potential romantic partners: internet or online dating. Of the couples that met in 2010, 22% report to have initiated contact

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30   Illouz, *Consuming the romantic utopia.*

31   Eaton, A. A., & Rose, S. (2011). Has dating become more egalitarian? A 35 year review using Sex Roles. *Sex Roles, 64*, 843-862. doi:10.1007/s11199-011-9957-9.

32   Braboy Jackson, P., Kleiner, S., Geist, C., & Cebulko, K. (2011). Conventions of courtship: Gender and race differences in the significance of dating rituals. *Journal of Family Issues, 32*, 629-652. doi:10.1177/0192513X10395113.

33   Heldman, C., & Wade, L. (2010). Hook-up culture: Setting a new research agenda. *Sex Research and Social Policy, 7*, 323-333. doi:10.1007/s13178-010-0024-z.

34   Hughes, M., Morrison, K., & Asada, K. J. K. (2005). What's love got to do with it? Exploring the impact of maintenance rules, love attitudes, and network support on friends with benefits relationships. *Western Journal of Communication, 69*, 49-66. doi:10.1080/10570310500034154.

35   Bozon, M., & Rault, W. (2013). Where do people meet their first sexual partner and their first life partner? *Population & Societies, 496*, 1-4.

online. As such, online dating currently comes in third place, for non-heterosexual couples and middle-aged heterosexuals in particular.[36] This order resonates with recent findings from a popular survey in Belgium where 32% of the respondents met his or her partner by going out, 15% met through friends, 13% met online, and 11% met at work.[37] The highest online dating prevalence is noticed during the mid-20s until the mid-40s, indicating a non-linear relationship with age;[38] yet the use of online dating platforms by 18-to 24-year olds has nearly increased threefold, whereas it doubled for 55- to 64-year olds between 2013 and 2015 in the US.[39] Such findings indicate that singles among all age ranges are finding their way to different online dating platforms, which is also reflected in the myriad of dating apps targeted at specific audiences of all ages and preferences. Online dating is slightly more popular among highly educated internet users,[40] which is hardly surprising as they often experience troublesome work-life balance that pressures young couples' relations and hinders busy singles from coincidently meeting new people.[41]

The appropriation of media technologies to search for romantic partners and even assisted matchmaking is all but new. Examples are abundant, ranging from newspaper ads over video dating to experimental computer-assisted matchmaking. Such means however remained marginal, which is absolutely not the case for online dating. As Finkel and colleagues[42] argue, the massive uptake of the internet as a mass medium in the mid-1990s cause online dating platforms to gradually gain in popularity. Starting off as digital equivalents of newspaper ads, dating platforms of the first generation allow building profiles, browsing the abundance of others' profiles and instigating initial communication. The second generation adds the capability of algorithm-based matchmaking. This means that user information is analyzed and compared to those of others, in order to filter and recommend suitable romantic partners and to initiate contact with them. Finally, the third and current generation of dating platforms incorporate location-based capabilities to factor in geographical proximity to recommend potential matches.

The Stigmatization of Online Dating

In general, research on stigma is strongly indebted to Goffman's[43] seminal work in which he argues that society categorizes people on the basis of their inherent attributes. When such

36   Rosenfeld & Thomas, Searching for a mate.
37   Sokol, K., & Coen, H. (2016). *We vinden onze partner steeds vaker online.* Retrieved from: http://deredactie.be/cm/vrtnieuws/binnenland/1.2665493.
38   Smith, A. & Duggan, M. (2013). *Online dating & relationships.* Washington, US: PEW Research; Valkenburg, P. M., & Peter, J. (2007). Who visits online dating sites? Exploring some characteristics of online daters. *CyberPsychology & Behavior, 10*, 849-852. doi:10.1089/cpb.2007.9941.
39   Smith, A. (2016, February 11). 15% of American Adults have used online dating sites or mobile dating apps. *Pew Research Center*. Retrieved from: http://www.pewinternet.org/2016/02/11/15-percent-of-american-adults-have-used- online-dating-sites-or-mobile-dating-apps/.
40   Smith & Duggan, *Online dating & relationships.*
41   Henry-Waring, M., & Barraket, J. (2008). Dating & intimacy in the 21st century: The use of online dating sites in Australia. *International Journal of Emerging Technologies & Society, 6,* 14-33.
42   Finkel et al., Online dating.
43   Goffman, E. (1963). *Stigma: Notes on a spoiled identity*. Englewood Cliffs, NJ: Prentice-Hall.

attributes render someone different in an undesirable fashion, he or she 'is thus reduced in our minds from a whole and usual person to a tainted, discounted one'.[44] Attributes that lead to substantial and deep discrediting are referred to as stigmata. Since its original definition, the concept of stigma has been further developed and substantiated by empirical work in a broad range of disciplines, including psychology and sociology. This body of literature has mainly focused on its definition, sources, coping strategies and outcomes.[45]

Still, Link and Phelan[46] proposed one of the most insightful and thorough sociological conceptualizations up to date. In their work, they subdivide the stigma concept into four interrelated components. The first component entails *labelling* differences, which refers to what exactly makes a person different from another. That is what the categorization is based upon, in this case using online dating platforms. Second, the authors point to the *human differences* that are associated with this categorization, referred to as undesirable stereotypical characteristics or negative attributes that are tied to who falls within the stigmatized social categorization, such as users of online dating platforms. Consequently, the third component involves a clear social *in-group* and *out-group* separation, distinguishing 'them' from 'us'. Put differently: how are online daters different from myself? This gives rise to a fourth component, pointing to the *loss of status* and *discrimination*.

Such conceptualization is fairly compatible with the current body of albeit scattered empirical research on the stigmatization of online dating. This research implicitly oscillates between a focus on online dating as *practice* and the *characteristics of online daters*. In both instances, online dating platforms and their users are considered to transgress the still dominant ideals that surround romantic relation formation. In the following paragraphs we unpack this line of reasoning.

Several arguments support the *practice-directed* point of view. For one, a major concern is that online dating advocates a marketization of romance. Online dating platforms are considered part of the rationalization of intimacy.[47] As such, especially given their commercial nature, dating platforms present potential romantic partners and relationships as commodities to filter and choose from.[48] Romantic ideals seem crudely opposed by the rational, mechanic nature of finding a partner online. Ideally, romantic love is characterized by a sudden and fatal attraction to that one, special person. Romantic love is supposed to endure and overcome all difficulties. Online dating platforms seemingly contradict such romantic discourse by providing abundant

44   Goffman, *Stigma*, p. 3.
45   e.g., LeBel, T. P. (2008). Perceptions of and responses to stigma. *Sociology Compass, 2*, 409-432. doi:10.1111/j.1751-9020.2007.00081.x; Major, B., & O'brien, L. T. (2005). The social psychology of stigma. *Annual Review of Psychology, 56*, 393-421. doi:10.1146/annurev.psych.56.091103.070137.
46   Link, B. G., & Phelan, J. C. (2001). Conceptualizing stigma. *Annual Review of Sociology, 27*, 363-385. doi:10.1146/annurev.soc.27.1.363.
47   Dröge, K., & Voirol, O. (2011). Online dating: The tensions between romantic love and economic rationalization. *Zeitschrift für Familienforschung, 23*, 337-357.
48   Best & Delmege, The filtered encounter: Online dating and the problem of filtering through excessive information, 237-258; Heino, R. D., Ellison, N. B., & Gibbs, J. L. (2010). Relationshopping: Investigating the market metaphor in online dating. *Journal of Social and Personal relationships, 27*, 427-447. doi:10.1177/0265407510361614.

choice in a rather sterile environment. Dating platforms provide a virtually unlimited potential to try out and trade in potential partners for other, more suitable candidates.[49] The affordances of dating platforms entice users to adopt a rational comparative, 'assessment mindset'[50] or 'shopping mentality',[51] rather than emotionally opening up for and finding closure and satisfaction in that one 'special' person.

A second source of friction between the practice of online dating and romantic ideals lies within the supposed artificial nature of initial computer-mediated communication. Previous research pointed to the frustration with being unable to fully express oneself within the constraints of an online dating profile.[52] Similarly, the direct communication between users tends to hold its own caveats. When a user is interested in another, he or she is able to instigate contact by sending a message or a similar token of interest. Such computer-mediated contact is inherently stripped of a range of cues.[53] Moreover, it might provoke incorrect or unsuitable self-disclosure. Users might give false information about who they are and what they look like, or steer the conversation into an unfavorable direction, e.g. pursuing merely sexual rather than romantic encounters. Finally, communication on dating platforms is prone to sudden termination, leaving the other perplexed about why the conversation ended so abruptly. Even if initial computer-mediated communication evolves into a physical date, there are still caveats in transferring a pleasant online interaction into a physical romantic endeavor.[54]

Consequently, the supposed artificial nature of online dating, and its seeming contradiction with romantic discourse tends to *reflect poorly on the users* of these platforms. A brief survey of the literature reveals several negative attributes potentially tied to the social category of online dating users. There is a broad literature, especially dating back to the early days of the internet as a mass medium, pointing to the negative impact of online spaces on social relations.[55] Online spaces were pointed out as especially appealing for socially less-competent people to communicate in the comfort of a controlled, asynchronous environment.[56] Although more recent research tends to nuance or even negate such claims,[57] especially because of the mass uptake of online communication, this point of view tends to linger as a popular belief. That is, online daters could be considered as somewhat desperate people who lack the

49   D'Angelo & Toma, There are plenty of fish in the sea.
50   Finkel et al., Online dating.
51   Best & Delmege, The filtered encounter.
52   Zytko, D., Grandhi, S. A., & Jones, Q. (2014). Impression management struggles in online dating. In *Proceedings of the 18th international conference on supporting group work* (pp. 53-62). ACM.
53   Toma, C. L., Hancock, J. T., & Ellison, N. B. (2008). Separating fact from fiction: An examination of deceptive self-presentation in online dating profiles. *Personality and Social Psychology Bulletin, 34*, 1023-1036. doi:10.1177/0146167208318067.
54   Zytko, D., Grandhi, S. A., & Jones, Q. (2014). Impression management struggles in online dating. In *Proceedings of the 18th international conference on supporting group work* (pp. 53-62). ACM.
55   Nie, N. H. (2001). Sociability, interpersonal relations, and the Internet: Reconciling conflicting findings. *American Behavioral Scientist, 45*, 420-435. doi:10.1177/00027640121957277.
56   Caplan, S. E. (2003). Preference for online social interaction: A theory of problematic Internet use and psychosocial well-being. *Communication Research, 30*, 625-648. doi:10.1177/0093650203257842.
57   Rainie, H., & Wellman, B. (2012). *Networked: The new social operating system.* Cambridge, MA: MIT Press.

social and communicative skills to engage in romantic behavior in a direct, physical setting. Furthermore, as argued, the controlled nature of online dating platforms incites users to carefully manage impressions in terms of physical appearance, personality, socio-economic status, and aspirations.[58] This could lead to perceptions of online daters as untrustworthy, perhaps concealing a lack of emotional and physical attractiveness. Some evidence points to even downright dangerous situations, such as stalking and sexual aggression.[59]

Attitudes toward online dating have so far only been scarcely researched. The prior research does indicate a negative stance toward online romantic relationships.[60] Especially fear of disapproval and a lack of social support by friends and family appear prevalent.[61] Moreover, a negative relationship was found between romantic beliefs and the perception of online romantic relationships, hence confining the romantic relationships uniquely to the standard of physical personal interaction.[62]

Still, online dating stigma is prone to evolution. For instance, American research points to an increase in the proportion of respondents who agree with online dating being 'a good way to meet people' (i.e., 44% in 2005 versus 59% in 2013). Similarly, there is a decline in the belief that 'people who use online dating are desperate' (29% in 2005 versus 21% in 2013).[63] The practice of online dating is becoming detached of its predecessors' marginal nature (e.g., print ads, video dating), whereas popular culture has embraced positive success stories in fiction and human interest shows. Additionally, positive word of mouth further normalizes

58   Ellison, N., Heino, R., & Gibbs, J. (2006). Managing impressions online: Self-presentation processes in the online dating environment. *Journal of Computer-Mediated Communication, 11*, 415-441. doi:10.1111/j.1083-6101.2006.00020.x; Gibbs, J. L., Ellison, N. B., & Heino, R. D. (2006). Self-presentation in online personals: The role of anticipated future interaction, self-disclosure, and perceived success in internet dating. *Communication Research, 33*, 152-177. doi:10.1177/0093650205285368; Guadagno, R. E., Okdie, B. M., & Kruse, S. A. (2012). Dating deception: Gender, online dating, and exaggerated self-presentation. *Computers in Human Behavior, 28*, 642-647. doi:10.1016/j.chb.2011.11.010; Toma, C. L., Hancock, J. T., & Ellison, N. B. (2008). Separating fact from fiction: An examination of deceptive self-presentation in online dating profiles. *Personality and Social Psychology Bulletin, 34*, 1023-1036. doi:10.1177/0146167208318067.

59   Couch, D., Liamputtong, P., & Pitts, M. (2012). What are the real and perceived risks and dangers of online dating? Perspectives from online daters: Health risks in the media. *Health, Risk & Society, 14*, 697-714. doi:10.1080/13698575.2012.720964.

60   Anderson, T. L. (2005). Relationships among Internet attitudes, Internet use, romantic beliefs, and perceptions of online romantic relationships. *CyberPsychology & Behavior, 8,* 521-531. doi:10.1089/cpb.2005.8.521; Wildermuth, S. M. (2004). The effects of stigmatizing discourse on the quality of on-line relationships. *CyberPsychology & Behavior, 7*, 73-84. doi:10.1089/109493104322820147.

61   Sautter, J. M., Tippett, R. M., & Morgan, S. P. (2010). The social demography of Internet dating in the United States. *Social Science Quarterly*, *91*, 554-575. doi:10.1111/j.1540-6237.2010.00707.x; Wildermuth, The effects of stigmatizing discourse on the quality of on-line relationships; Wildermuth, S. M., & Vogl-Bauer, S. (2007). We met on the net: Exploring the perceptions of online romantic relationship participants. *Southern Communication Journal, 72*, 211-227. doi:10.1080/10417940701484167.

62   Anderson, Relationships among internet attitudes, Internet use, romantic beliefs, and perceptions of online romantic relationships.

63   Smith & Duggan, *Online dating & relationships.*

online dating practices through informal networks.[64]

The Present Study

Drawing upon the outlined literature, we propose two hypotheses that guide the present study and its analysis. We argued that the relatively novel practice of online dating, and especially its marketization and rational, technology-driven character contradict with the idealized values that underlie romantic love. The *first hypothesis* consequently predicts a positive relation between maintaining romantic beliefs and the stigmatization of the practice of online dating, and vice versa. Furthermore, in line with prior literature on the stigmatization of online dating, we differentiate between the stigmatization of practice and the stigmatization of its users. In line with Link and Phelan's[65] conceptualization of stigma, our *second hypothesis* predicts that negative attributions to online daters are associated with framing them as part of an alien out-group due to the inability to identify with online daters.

METHOD

During the spring of 2016, 510 respondents were sampled through a haphazard procedure and filled out a two-page paper-and-pencil survey. A team of two researchers visited eight different Belgian cities and positioned themselves in a busy shopping street in the city center. They invited random people who passed by to voluntarily take part in the study. Although this is not a strict random sample, there is a random factor in selecting the pedestrians that walked by.[66] Anonymity was assured by providing each respondent with a blank envelope. Five random responders and 56 respondents that were unfamiliar with online dating were deleted from all analyses. After data cleaning 449 respondents remained in the sample. On average, the respondents were 34.47 years old ($SD = 12.83$) and approximately two third of the sample (66%) were females. Everyone in the sample at least heard about online dating. Additionally, 35% claimed to know people who were engaged in it, 14% reported to be active users, and 17% indicated to be former users.

MEASURES

Online dating stigma was measured by a set of twelve five-point semantic differential rating scales. These rating scales are preceded by 'How do you think about the activity of online dating?' supplemented with a brief description on how to interpret the rating scales. The opposite labels were derived from existing literature on the stigmatization of dating practices, as summarized in the introduction. A full list of labels appears in Figure 1.

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64   Finkel et al., Online dating.
65   Link & Phelan, Conceptualizing stigma.
66   See also Bernard, H. R., & Bernard, H. R. (2012). *Social research methods: Qualitative and quantitative approaches*. London: Sage.

Online dater stigma was measured by a set of thirteen five-point semantic differential rating scales. Each set was presented for males and females separately. It was preceded with 'How do you think of people who are active on online dating platforms?' The attributes were derived from existing literature on the stigmatization of online daters. A full list of attributes appears in Figure 2.

Demographics and sexual orientation include a dichotomous question on gender, the respondent's year of birth, and his or her level of education. Education level is indicated by the highest degree obtained: (a) no degree, (b) primary education, (c) secondary education, (d) higher education. Sexual orientation was split up in three categories: (a) heterosexual, (b) homosexual, or (c) bisexual.

Relationship background was measured by asking whether the respondent is currently in a relationship and the duration of the respondents' longest relationship.

Romantic beliefs were measured by Sprecher and Metts' *Romantic Beliefs Scale.*[67] This instrument consists of four measures, based on seven-point Likert scales: 'love finds a way' ($\alpha = .79$, $M = 4.24$, $SD = 1.03$), 'one and only' ($\alpha = .65$, $M = 4.00$, $SD = 1.30$), 'idealization' ($\alpha = .65$, $M = 3.52$, $SD = 1.07$), and 'love at first sight' ($\alpha = .62$, $M = 3.14$, $SD = 1.16$). Although the internal consistency measures turn out rather low, they are in line with prior research based on these same measures.[68]

Familiarity with online dating was measured with a single question: 'are you familiar with online dating'. The response categories were (a) no, never heard of it, (b) yes, I heard of it, (c) yes, I know one or more users, (d) yes, I am an active user, (e) yes, I was an active user. This variable served as a covariate.

Typicality of online dating platforms consisted of six seven-point Likert rating scales. For six popular online dating platforms, scattered among first, second and third generation online dating platforms,[69] the respondents were asked to rate the extent to which they thought of the platform as typical for the activity of online dating. The following platforms were chosen based on popularity and marketing efforts in Belgium: Elitedating, Rendez-Vous.be, OKCupid, Tinder, Twoo, and WeMatch. The respondents could also indicate that they were unfamiliar with a platform. Prior to the analysis, individual average scores were computed based on these six ratings. If the score of a specific platform would equal or exceed that average score, that platform would be coded as typical for online dating. These computed variables are used in subsequent analyses to control for possible varying perceptions of what kind of platforms are relatively indicative for the practice of online dating.

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67   Sprecher, & Metts, Development of the Romantic Beliefs Scale and examination of the effects of gender and gender-role orientation.

68   Sprecher, & Metts, Development of the Romantic Beliefs Scale and examination of the effects of gender and gender-role orientation; Sprecher, S., & Metts, S. (1999). Romantic beliefs: Their influence on relationships and patterns of change over time. *Journal of Social and Personal Relationships, 16*, 834-851. doi:10.1177/0265407599166009.

69   Finkel et al., Online dating.

Identification with male and female online daters was measured separately, based on an instrument developed by Tropp and Wright.[70] This seven-point measure uses a single item and is based on Venn diagrams reflecting the self and the target (i.e., online daters). These Venn diagrams overlap progressively, indicating the extent to which one identifies with online daters.

Results

STIGMATIZATION OF ONLINE DATING AS PRACTICE

To grasp the diversity in the grounds to stigmatize online dating as a practice, a Latent Class Analysis (LCA) was run on the semantic differentials on online dating stigma. LCA has the advantage of dividing subsamples in subgroups, in this case allowing the isolation of subgroups of respondents with a similar stance towards online dating. A common strategy to select the appropriate number of subgroups is to re-iterate the analysis for an increasing number of classes and then select the solution with the lowest BIC-value.[71] In this particular case, a three-cluster solution showed the best fit.

Figure 1 depicts the three clusters' average responses to the semantic differentials. The majority of respondents (57%) is assigned to a latent cluster with a fairly *neutral* stance towards the practice of online dating. Its scores on the semantic differentials remain close to its theoretical mid-point. A second cluster, which amounts to 32% of the respondents, holds a rather *positive* attitude towards online dating. They are more inclined to consider online dating as exciting, playful, broadening, interesting and practical. The third, yet smallest cluster (11%) holds a fairly *negative* stance towards online dating. These respondents, who hold a stigma toward the practice of online dating, tend to think of online dating as a waste of time, ineffective, flippant, and uninteresting.

70   Tropp, L. R., & Wright, S. C. (2001). Ingroup identification as the inclusion of ingroup in the self. *Personality and Social Psychology Bulletin, 27*, 585-600. doi:10.1177/0146167201275007.

71   Vermunt, J. K., & Magidson, J. (2005). *Latent GOLD® 4.0 User's Guide.* Retrieved from: http://www. statisticalinnovations.com/wp-content/uploads/LGusersguide.pdf.
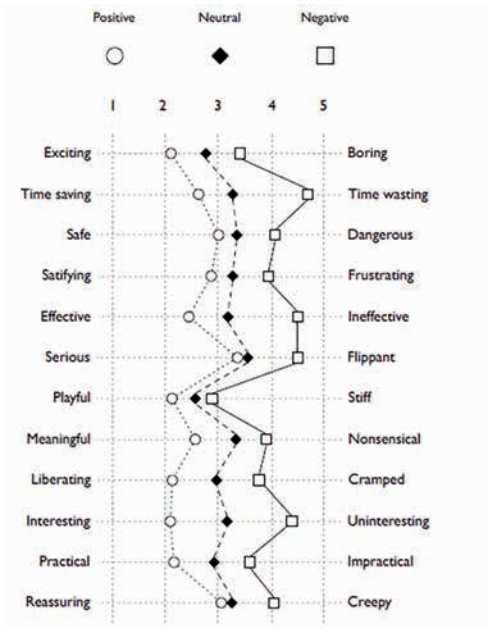
Figure 1: Graphical depiction of subgroup means per online dating practice label.

In a subsequent analysis, covariates were added – see Table 1. More specifically, multinomial regression functions were computed to assess the relations between these covariates and the three stances towards online dating. These covariates, functioning as independent variables, were basic demographics, sexual orientation, relationship background, romantic beliefs, familiarity with online dating and typicality of online dating platforms.

The results show that in comparison with the *neutral* subgroup, there is a higher chance of classifying into the *positive* subgroup when there is a stronger belief in 'love finds a way', and a less pronounced belief in 'idealization'. Respondents who think positively about online daters also more often than the neutral subgroup indicate to know one or more users or to be active users themselves. Moreover, there is a significant effect of considering a first-generation dating site as typical for the practice of online dating.

When comparing the *negative* subgroup to the neutral subgroup, a positive association emerges with subscribing to the belief that 'love finds a way'. Conversely, 'idealization' and 'love at first sight' yield the opposite effect. Moreover, those who stigmatize online dating display a higher chance of knowing one or more users than respondents with a neutral stance. Finally, no linear association between age and stigmatization is found. The effect implies a slightly increasing probability of a negative stance in older respondents.

In light of these results, the hypothesized relations between romantic beliefs and the stigmatization of the practice of online dating show ambiguous results that are only partly in support of our first hypothesis.

	Positive		Negative	
	B	SE	B	SE
Demographics				
Age	-0.043	0.034	-0.089	0.051
Age²	-0.001	0.002	0.004*	0.002*
Gender (Reference = female)	-0.012	0.341	-0.292	0.486
Education (Reference = no degree)				
Primary education	5.969	49.141	-2.794	55.796
Secondary education	-1.568	34.736	-8.745	24.591
Higher education	-1.100	34.735	-7.720	24.585
Sexual orientation (Reference = Heterosexual)				
Homosexual	-0.566	1.086	-5.169	10.060
Bisexual	1.786	1.548	2.514	1.785
Relationship				
Currently in a relationship (Reference = no)	0.463	0.416	0.881	0.598
Duration longest relationship (in months)	0.002	0.003	0.003	0.005
Romantic Beliefs				
Love finds a way	1.066*	0.222	0.888*	0.303
One and only	-0.334*	0.151	0.094	0.199
Idealization	-0.598*	0.195	-0.712*	0.276
Love at first sight	-0.055	0.133	-0.370	0.182
Familiarity Online Dating (Reference = Heard about it)				
Know one or more users	1.052*	0.420	1.340*	0.530
Am an active user	1.814*	0.584	-0.267	1.215
Was an active user	0.778	0.488	0.226	0.787
Typical Online Dating Platforms (Above personal average)				
Elitedating	0.464	0.404	0.646	0.537
Parship	0.007	0.395	-0.634	0.596
Rendez-Vous	2.130*	0.629	0.162	1.232
OKCupid	-1.308	0.948	-4.707	9.723
Tinder	-0.259	0.359	-0.097	0.509
Twoo	-0.396	0.608	-0.281	0.805
WeMatch	-0.236	0.818	-3.680	9.317
* Overall Wald $p < .05$ and the specific effect's Z > 1.96, which implies $p < .05$				

Table 1: Multinomial covariates model predicting subgroup membership of practice stigmatization.

STIGMATIZATION OF ONLINE DATERS

The same approach was used to examine the stigmatization of online daters. An LCA on the semantic differentials measuring the attributes of both male and female online daters yielded a four-class solution as the best-fitting model. The model's results are enumerated in Figure 2.
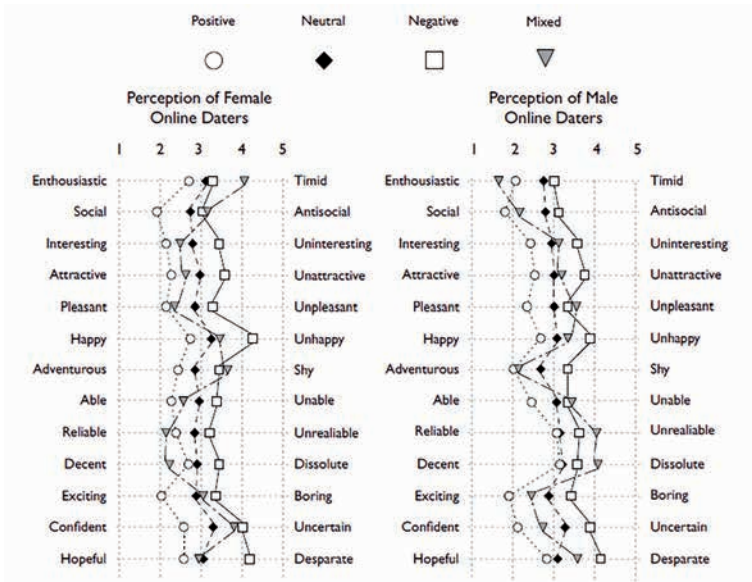
Figure 2: Graphical depiction of subgroup means per online dater attribute per gender.

The first and largest subgroup (50%) again consists of respondents with a predominantly *neutral* stance towards online daters. These respondents tend to register answers close to the theoretical mid-point. The second subgroup (22%) is characterized by a much more *negative* appraisal and hence stigmatization of online daters. Online daters are generally presumed more unhappy, insecure, unattractive, and desperate. Contrarily, the third subgroup (18%) generally attributes *positive* characteristics to online daters. More specifically, females are considered social, attractive, agreeable and exciting, whereas males are perceived as social, adventurous, exciting and secure. Finally, the fourth subgroup (10%) exemplifies a *mixed* appraisal. Female online daters are typified as interesting, agreeable, reliable and decent. However, they are also seen as insecure and timid. Conversely, male online daters are characterized as enthusiastic, adventurous and exciting, but are at the same time judged as unreliable and dissolute.

Subsequently, covariates were added to the model to compute multinomial regression functions predicting subgroup membership, considering the neutral subgroup as a reference category. The model's independent variables are demographics, sexual orientation, relationship background, romantic beliefs, familiarity with online dating, typicality of online dating platforms, and identification with male and female online daters. Moreover, interactions between gender and identification variables were computed.

The results show that comparative to the neutral subgroup, the negative subgroup identifies less with female online daters. Both significant effects of the linear and quadratic age term indicate a non-linear age effect as mostly the youngest and oldest respondents stigmatize online daters. Moreover, they consider first-generation dating site Rendez-Vous as less

indicative of a typical online platform. The subgroup with a positive stance towards online daters is generally younger in age, while they identify stronger with female daters than the neutral subgroup. Finally, membership of the mixed subgroup is more likely among females and middle-aged respondents. Moreover, there is a weaker identification with male daters, especially in the case of female respondents. The mixed subgroup also considers a first-generation dating site like Rendez-Vous as typical for online dating.

	Negative		Positive		Mixed	
	B	SE	B	SE	B	SE
Demographics						
Age	-0.076*	0.036	-0.095*	0.044	-0.308*	0.094
Age²	0.005*	0.002	-0.002	0.002	0.009*	0.003
Gender (Reference = female)	-0.799	0.719	-0.670	0.488	-2.333*	0.955
Education (Reference = no degree)						
Primary education	-8.518	-0.234	-1.125	-0.022	-15.503	-0.279
Secondary education	-7.869	-0.217	-4.914	-0.096	-5.781	-0.113
Higher education	-7.128	-0.197	-4.186	-0.082	-4.994	-0.097
Sexual orientation (Reference = Heterosexual)						
Homosexual	-0.180	1.223	1.303	0.958	-3.363	12.101
Bisexual	-0.121	1.331	-7.609	16.235	-5.510	16.223
Relationship						
Currently in a relationship (Reference = no)	-0.559	-1.103	-1.052	-2.062	0.345	0.480
Duration longest relationship (in months)	0.001	0.004	0.008	0.004	0.017	0.008
Romantic Beliefs						
Love finds a way	-0.035	0.322	0.199	0.230	-0.211	0.334
One and only	0.002	0.219	0.335	0.166	0.142	0.240
Idealization	0.227	0.228	-0.149	0.210	-0.190	0.282
Love at first sight	-0.026	0.176	-0.342	0.163	0.047	0.224
Familiarity Online Dating (Reference = Heard about it)						
Know one or more users	0.183	0.517	-0.215	0.473	1.230	0.737
Am an active user	0.271	0.871	0.004	0.695	1.567	1.054
Was an active user	0.336	0.636	0.163	0.571	1.825	0.865
Typical Online Dating Platforms (Above personal average)						
Elitedating	0.011	0.496	-0.340	0.480	0.455	0.773
Parship	-0.269	0.527	-0.511	0.552	-2.283	0.969
Rendez-Vous	3.019*	1.461	0.901	0.680	2.593*	1.103
OKCupid	2.731	1.177	-4.946	10.941	1.894	1.403
Tinder	0.171	0.437	-0.122	0.477	-0.162	0.681
Twoo	0.810	0.731	-0.476	1.007	-1.107	1.080
WeMatch	3.362	1.417	1.850	1.057	-2.984	11.130
Identification						
With male dater	-0.166	0.218	-0.287	0.207	-0.891*	0.325
With female dater	-0.523*	0.235	0.547*	0.207	0.346	0.244
With male dater*female	0.706	0.609	-0.421	0.441	-2.541*	0.652
With female dater*female	0.042	0.567	0.341	0.395	1.547	0.600
* Overall Wald p < .05 and the specific effect's Z > 1.96, which implies p < .05						

Table 2: Multinomial covariates model predicting subgroup membership of dater stigmatization.

Discussion

Foremost, this study reveals that respondents hold a predominantly neutral stance towards online dating as practice and its users. Both negative and positive attitudes reside with small proportions of the sample. This suggests a normalization of online dating, which aligns with prior evidence that points to a decline in stigmatization.[72] Nevertheless, we do find evidence of minor polarization, dividing our sample in both negative and positive stances toward practice and users. We hypothesized a relationship between holding on to romantic beliefs and this polarization. More specifically, we predicted that a strong belief in romantic values relates to the stigmatization of online dating practice and users, whereas discarding such beliefs would clear a path to a more positive attitude. The results partially support this hypothesis, indicating a much more complex relationship between both categories of variables. The stigmatization of practice is positively related to the belief that 'love finds a way'. This value refers to overcoming difficulties within a relationship due to negative external circumstances, such as social disapproval.[73] As online dating platforms offer a means to weigh an abundance of potential partners, as an easy way out from the possible turmoil of a relationship into something likely better or at least more socially acceptable. On the other hand, stigmatization is negatively tied to 'idealization'. Although this seemingly contradicts the hypothesis' line of reasoning, there could be a logical explanation. Perhaps people accept that the reality of a romantic relationship is one of compromise and accepting that a romantic counterpart is not perfect.

We found that a positive stance toward the practice of online dating is also negatively related to idealization. This suggests that the proponents of online dating experience less reassurance in realizing that their counterparts are or will not be perfect. The virtually unlimited pool of alternatives might incite them to hold a positive attitude to online dating. In a similar vein, proponents of online dating tend to reject the belief that there is something as 'the one and only'. Still, a positive attitude is positively associated with the value of 'love finding a way', hinting that in contrast to stigmatizing respondents, proponents of online dating do consider online dating as a legitimate channel to encounter romantic love. Noteworthy in supporting these explanations is the finding that our respondents tend to be highly familiar with online dating, at least within their proper social circle.

In contrast to our *first hypothesis* prediction, we found no relationship between maintaining romantic beliefs and the valuation of online daters. This appraisal is, nonetheless, explained by the extent of identification, which is in line with our *second hypothesis*. We predicted that considering online daters as a remote out-group would align with the stigmatization of online dating users. The results indicate that stigmatization of online daters is associated with a dissociation from female online daters, whereas a positive stance ties with an identification with female online daters. Still, both negative and positive attributes generally focus on the same attributes across genders, whereas these conceptions of online daters in relation to the self are archetypically aligned with the female gender. In other words, the archetype

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72   Smith & Duggan, *Online dating & relationships.*
73   Sprecher, & Metts, Development of the Romantic Beliefs Scale and examination of the effects of gender and gender-role orientation.

of a female dater is especially frowned upon by the negative subgroup, while celebrated by the positive subgroup. A possible explanation could be that engaging in online dating and assuming the agency it affords is most incongruent with traditional gender roles and hence most noteworthy for the female gender. However, there is a tendency among women to dissociate themselves from men, especially when male daters are considered unreliable and dissolute and female daters are regarded unhappy, uncertain, and desperate. These findings illuminate a complex pattern of gender differences within the stigmatization of online daters.

Our results also shed light on the socio-demographic background of online dating stigmatization. In line with prior research,[74] we found that a tendency exists among middle-aged respondents to be more permissive of both practice and users. This is likely to be explained sociologically from the prevalence of break-ups and the difficulties people in their late 20s to 40s experience in finding new potential partners within their condensed social circles.[75] In contrast, younger generations are confronted with flourishing social networks in school and leisure activities. On the other hand, the older generations might hold on tight to current relationship, while being more reluctant to turn to technological means to engage in a novel one.

Finally, the present study holds a nuance towards online dating platforms as a general category. In line with Finkel et al.,[76] we acknowledge diversity in successive generations of online dating platforms. This evolution appears to play a role in the stigmatization of both practice and users. Online dating is mostly conceived of in terms of first-generation platforms, rather than more current location-based mobile applications such as the popular Tinder app. This is an important nuance in understanding and generalizing this study's results.

Moreover, this study serves as a single snapshot in time and space, suffering from the common shortcomings of the cross-sectional survey format, such as the inability to establish causality, respondent self-selection and social desirability, despite assured anonymity. Evidently, the increasing uptake of the phenomenon of online dating invites prolonged and nuanced attention. The rapid succession of and diversity within platforms and the presumably nuanced social acceptance require prolonged, tailored and hence differentiated research. A final limitation is related to the convenience sample used in this study, which impedes the generalization of our research findings. An implication of this is the possibility that our psychological conclusions are more solid than our sociological observations because we used a non-representative sample. Future studies on the stigmatization of online dating that would use a more representative sample and a narrow focus on dating apps are therefore recommended.

74   Smith & Duggan, *Online dating & relationships*; Valkenburg, P. M., & Peter, J. (2007). Who visits online dating sites? Exploring some characteristics of online daters. *CyberPsychology & Behavior, 10*, 849-852. doi:10.1089/cpb.2007.9941.

75   Rözer, J. J., Mollenhorst, G., & Volker, B. (2015). Romantic relationship formation, maintenance and changes in personal networks. *Advances in Life Course Research, 23*, 86-97. doi:10.1016/j.alcr.2014.12.001.

76   Finkel et al., Online dating.

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8: JUSTIFICATIONS FOR 'GHOSTING OUT' OF DEVELOPING OR ONGOING ROMANTIC RELATIONSHIPS: ANXIETIES REGARDING DIGITALLY-MEDIATED ROMANTIC INTERACTION

JIMMIE MANNING, KATHERINE J. DENKER, AND REBECCA JOHNSON

As computer-mediated communication continues to be a constitutive force in online dating and romantic interaction, the way people talk about relationships changes.[1] New terms including *sexting*,[2] *friending* and *unfriending*,[3] and *googling* [4] emerge in order to describe the ways online and offline worlds are converging as people create, sustain, and terminate relationships. Recently, attention has been paid to another such term, *ghosting*, which is a 'process in which one relational partner abruptly ends communication, typically early in the relationship'.[5] Ghosting can cause many people anxiety and confusion because of its ambiguous[6] and impersonal[7] nature. Yet, even though people do not like being placed in the frustrating position of being 'ghosted out on'—to use the phrase commonly provided by participants in our study—they still find themselves ghosting others as a way of ending relational communication.

Although the term has gained popular interest in many world cultures,[8] research about ghosting as a practice is extremely limited. As several scholars note[9] the academic record about ghosting is incredibly limited and more research is needed to develop knowledge about this sometimes-hurtful practice. In response, the present study uses interpretive qualitative research methods to develop descriptive findings regarding ghosting as a computer-mediated

1   Baym, N. (2015). *Personal connections in the digital age* (2nd Ed.). Cambridge, UK: Polity.

2   Manning, J. (2013). Interpretive theorizing in the seductive world of sexuality and interpersonal communication: Getting guerilla with studies of sexting and purity rings. *International Journal of Communication, 7*, 2507-2520.

3   Baab, L. M. (2011). *Friending: Real relationships in a virtual world*. Downers Grove, IL: InterVarsity Press.

4   Choney, S. (2013, March 26), No Googling, says Google — unless you really mean it. *NBC News*. Retrieved from: https://www.nbcnews.com/technolog/no-googling-says-google-unless-you-really-mean-it-1C9078566.

5   Manning, J., Buchanan, C., & Denker, K. J. (2019, May). *Ghosting: Defining a relational communication phenomenon*. Paper presented at the meeting of the International Communication Association, Washington, D.C..

6   LeFebvre, L. (2017). Phantom lovers: Ghosting as a relationship dissolution strategy in the technological age. In N. Punyanunt-Carter N and Wrench JS (Eds.), *Social media & romantic relationships* (pp. 219-236). Lanham, MD: Lexington.

7   Manning et al., *Ghosting*.

8   Harasymchuk, C. (2015, October 6) Ghosting: The 51st way to leave your lover? *Science of relationships*. Retrieved from: https://www.luvze.com/ghosting-the-51st-way-to-leave-your-lover/.

9   Freedman, G., Powell, D. N., Le, B. & Williams, K. D. (2018). Ghosting and destiny: Implicit theories of relationships predict beliefs about ghosting. *Journal of Social and Personal Relationships*, 1-20. doi:10.1177/0265407517748791; Harasymchuk, Ghosting.

communication practice. As Manning and Kunkel[10] note, underexplored topics related to relationships often benefit from interpretive analysis, as qualitative research can create or refine assumptions related to a research topic and provide a firm foundation for future empirical research about the topic.

We begin by reviewing past scholarship about ghosting and related topics. We then offer two research questions grounded in coordinated management of meaning theory and related to why people ghost others. Using in-depth interviewing methods, we explore the intricacies of why people ghost and how they justify this behavior. We close with a discussion of the findings and directions for future research.

Relational Termination, Computer-Mediated Communication, and Ghosting

The use of the term *ghosting* in conjunction with computer-mediated communication began when Dwyer[11] used the term to characterize when people were logged into instant messenger but made themselves invisible to other users in the system. More recently, the term has taken on a new meaning and has been used in conjunction with mobile communication—particularly text messaging—to describe when someone disappears after romantic texts have been exchanged.[12] A number of popular culture websites and academic blogs have featured stories about ghosting,[13] demonstrating that it has a cultural currency. Many of these essays have questioned the ethics of ghosting and have called into question whether it is a mature or responsible strategy for ending a relationship. In response, early scholarly exploration has offered conceptual explorations related to how ghosting is part of a relationship dissolution process.[14]

Two other empirical studies have provided additional understanding of the practice. Freedman, et al.[15] linked implicit relational beliefs with intentions and evaluations of ghosting and found that those with stronger destiny beliefs (as opposed to growth beliefs) were more likely to terminate a relationship, provide less negative evaluations of ghosting, and approve of ghosting as a way to end relationships. Taking a different approach, Manning et al.[16] examined the discourses related to ghosting. Using participant definitional analysis, the researchers used interview data to construct an empirical definition of *ghosting* as a 'process in which one relational partner abruptly ends communication, typically early in the relationship' (p.

10   Manning, J. & Kunkel, A. (2014). *Researching interpersonal relationships: Qualitative methods, studies, and analysis.* Thousand Oaks, CA: Sage.
11   Dwyer, C. (2007). Digital relationships in the 'My Space' generation: Results from a qualitative study. Paper presented at the *40th Annual Hawaii International Conference on System Sciences*, in Waikoloa, Big Island, HI. Retrieved from Pace University School of Computer Science and Information Systems Technical Report, Number 235.
12   LeFebvre, Phantom lovers.
13   Crotty, N. (2014, July 11). Generation ghost: The facts behind the slow fade. *Elle*. Retrieved from: https://www.elle.com/life-love/sex-relationships/advice/a12787/girls-ghosting-relationships/.
14   LeFebvre, Phantom lovers.
15   Freedman et al., Ghosting and destiny.
16   Manning et al., *Ghosting*.

1). This work established that ghosting was mostly viewed by participants as happening in an online context; that it was anxiety-inducing for many as well as permeated by a sense of uncertainty; and that the aftermath of being ghosted was riddled with confusion. The study also suggested that ghosting could be polymediated, which means that a person might cease online/mobile communication in a romantic/sexual context while continuing to maintain other forms of face-to-face interaction.[17]

Beyond research that directly explores ghosting, a wide body of scholarship focused on anxiety related to online interpersonal communication as it pertains to relationships. Changes in technology have assuredly led to changes in the ways that people form, maintain, and terminate relationships.[18] The proliferation of mobile technologies such as smartphones allow people to relate in fast and convenient ways, although these ways often demand individual vulnerabilities.[19] These vulnerabilities manifest in different ways, ranging from public critique that some of these interactions are narcissistic in nature e.g. sending selfies;[20] to accusations of particular behaviors being immoral e.g. sexting;[21] to anxieties about whether online relational partners are real e.g. catfishing.[22] Given this ongoing history of anxieties related to relationships and computer-mediated technologies—and anxieties related to ending relationships[23]—ghosting creates a situation that is certainly rife with anxiety and uncertainty.[24]

Coordinated Management of Meaning Theory

Given the uncertainty of meaning assigned to motivations behind ghosting behaviors, the theoretical guide for this research is the coordinated management of meaning theory. Coordinated management of meaning explains how communicative interaction facilitates the ability for people to 'co-create, maintain, and alter social order, personal relationships,

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17   Calka, M. (2015). Polymediation: The Relationship between self and media. In A. Herbig, A. F. Herrmann & A. W. Tyma (Eds.), *Beyond new media: Discourse and critique in a polymediated age* (pp. 15–30). Lanham, MD: Lexington Books.

18   Baym, *Personal connections in the digital age*.

19   Lim, S. S. (2013). On mobile communication and youth "deviance": Beyond moral, media and mobile panics. *Mobile Media & Communication, 1*, 96-101. doi:10.1177/2050157912459503.

20   Halpern, D., Valenzuela, S., & Katz, J. E. (2016). "Selfie-ists" or "Narci-selfiers"? A cross-lagged panel analysis of selfie taking and narcissism. *Personality and Individual Differences 97*, 98-101. doi:10.1016/j.paid.2016.03.019.

21   Albury, K. (2015). Selfies, sexts, and sneaky hats: Young people's understandings of gendered practices of self-representation. *International Journal of Communication, 9*, 1734-1745; Döring, N. (2014). Consensual sexting among adolescents: Risk prevention through abstinence education or safer sexting? *Cyberpsychology: Journal of Psychosocial Research on Cyberspace, 8*(1), 1-9. doi:10.5817/CP2014-1-9.

22   Manning, J. (2015). Ipsedixitism, ipseity, and ipsilateral identity: The fear of finding ourselves in the fissures between phishing and Catfish. In A. Herbig, A. Herrmann, & A. Tyma (Eds.), *Beyond new media: Discourse and critique in a polymediated age* (p. 83-107). Lanham, MD: Lexington.

23   Collins, T. J., & Gillath, O. (2012). Attachment, breakup strategies, and associated outcomes: The effects of security enhancement on the selection of breakup strategies. *Journal of Research in Personality, 46*, 210-222. doi:10.1016/j.jrp.2012.01.008.

24   Manning et al., *Ghosting*.

and individual identities'.[25] Coordinated management of meaning assumes that, as part of a communication process, 'each person interprets and responds to the acts of another, monitors the sequence, and compares it to his or her desires and expectations'.[26] Ghosting allows for a particularly apt exploration of this theory, as participants who are ghosted are often left with an ambiguous sense of meaning[27] related to why the ghosting happened that is often bereft of clear communication cues[28] from the person who ghosted out of the relationship. Because coordinated management of meaning also examines how meaning in interpersonal communication is made intelligible by other aspects of the social order[29]—including how larger cultural discourses about computer-mediated relationships might impact more-distal relationship discourses—the theory also accommodates for the complexities of relational communication. People often feel compelled to shape or model their utterances regarding their relational practices in ways that are rhetorically sensitive, savvy to culturally-constructed relational rules,[30] and that do not disrupt expected social discourses related to relationship expectations.[31] To guide our exploration, two research questions are used:

RQ¹: How do participants describe uncertainties and anxieties related to ghosting?

RQ²: What reasons or rationales are used to justify ghosting?

Method

PARTICIPANTS
Data were collected using *active interviews*. Thirty participants, aged 18 to 46 years (M=24.7), were recruited from one large (9.5 million) and one small (60,000) Midwestern U.S. region. Initial questions were asked to ensure that participants were familiar with the term *ghosting*. Most participants were White (n=25), with 2 being Black, 1 Asian American, 1 Latinx and 1 identifying as multi-racial. Individuals were interviewed privately in a location of their preference using the same interview guide with follow-up questions asked for clarification or to allow continued exploration of a topic.

PROCEDURES
After the study was approved by two institutional review boards, participants were recruited by students in two different courses for semi-structured interviews. These interviews ranged in length between 12 and 55 minutes (M=33.1) and were audio recorded and transcribed

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25   Cronen, V. E., Pearce, W. B., & Harris, L. M. (1982). The coordinated management of meaning: A theory of communication. In F. E. X. Dance (Ed.), *Human communication theory: Comparative essays* (pp. 61-89). New York: Harper & Row.

26   Pearce, W. B. & Cronen, V. E. (1980). *Communication, action, and meaning: The creation of social realities*. New York, NY: Praeger.

27   LeFebvre, Phantom lovers.

28   Manning et al., *Ghosting*.

29   Pearce & Cronen, *Communication, action, and meaning.*

30   Manning, J. (2009). Because the personal is the political: Politics and the unpacking of (queer) relationships. In K. German, & B. Dreshel (Eds.), *Queer identities/political realities* (pp. 1-12). Newcastle, UK: Cambridge.

31   Baxter, L. A. (2011). *Voicing relationships: A dialogic perspective*. Thousand Oaks, CA: Sage.

verbatim. Transcription of the interviews yielded 479 pages of single-spaced data. Interview transcripts were combined with journal notes taken during and after each interview by the researchers to create a thick record.[32] The authors referred to the thick record during data analysis. All data are presented using pseudonyms.

DATA ANALYSIS

Two tools were used to analyze the data in this study, one for each research question.

Thematic analysis. To answer RQ1, *thematic analysis* was used. Each of Braun and Clarke's[33] six steps of thematic analysis were followed in conjunction with answering the first research question. These steps include becoming highly familiar with the data; taking notes and developing initial codes to help sort the data; and then creating categories by combining codes. These codes were then considered in conjunction with the research question to develop relevant themes. Themes were then named and paired with data, eventually allowing for the sixth and final step of writing up the results.

Typology development. Motivated by the first theme for the study, RQ2 was posed and *typology development* was applied. Typology development involves developing initial codes and themes from the data related to the research question; determining semantic relationships that place the data into appropriate categories; and then labeling each category with a specific, unique indicator of what the category contains.[34] The typology was exclusive in that all data could be assigned to one specific category but fluid in that similar themes could work together across categories. As is common with typology development, a *taxonomic analysis* was developed;[35] specifically, X is a type of Y where X is the reason and Y is a justification for ghosting.

Validity checks. Four procedures were followed to ensure data validity: an audit trail, negative case analysis, identification of alternate exemplars, and referential adequacy. The checks allowed for confirmation that both analyses were consistent across coders; that all of the data accounted for in the analysis; and that exemplars were used in the context of the original interview sessions.

Results

ANALYSIS 1: MAPPING UNCERTAINTY AND ANXIETY VIA THEMATIC ANALYSIS

Thematic analysis was used to answer RQ1. Four key themes were identified in the data. First, participants often explained that ghosting, as a behavior, is wrong – yet, at the same

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32   Carspecken, P. F. (1996). C*ritical ethnography in educational research: A theoretical and practical guide.* New York, NY: Routledge.

33   Braun, V. & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3,* 77-101. doi:10.1191/1478088706qp063oa.

34   Manning & Kunkel, *Researching interpersonal relationships.*

35   Spradley, J. P. (1979). *The ethnographic interview.* New York, NY: Holt, Rinehart and Winston.

time, many admitted they had done it themselves and quickly offered justifications for why they felt they had to do it. We note this theme as 'disjunctive views regarding ghosting and being ghosted'. The three other identified themes were more general in nature. Specifically, participants spoke about the uncertainty that accompanies being ghosted; critiqued ghosting in terms of how it fit into what they saw as relationship skills sets; and especially wanted to discuss ghosting acts that they saw as especially undefendable. Each of these themes are discussed more in-depth here.

Disjunctive views regarding ghosting and being ghosted. A dominant theme identified in the data, and one that provides context for how ghosting practices are both interpreted and justified, is the disjunctive nature of how participants described themselves when ghosting others versus how they described themselves in situations where they were ghosted. These disjunctive articulations of ghosting helped to establish that ghosting was a practice that was viewed as being both convenient and essential but that also involved a nefarious underbelly of carelessness and insensitivity. As Ciara, (22, White woman) indicated: 'Sometimes it's just the easy thing to do. You could explain, but that would just make things worse. So, you just stop responding, and that's that'.

Later in her interview, however, she chastised someone who ghosted her, arguing: 'He could've at least given me a clue. You know, texted me something that would at least let me know where things went wrong. That was, not caring. Or… insensitive. That was insensitive of him'. When asked if she believed she ever made someone feel that way, she confessed that she probably had, saying:

> That's why ghosting is so different. Because, well, for my generation I think we're going to have to get used to this. This isn't something that, you know, older people had to deal with. ….. so maybe we should, I don't know, be extra careful when we do it and think about how it feels to us.

While Ciara was candid about the disjunctive nature of her views and experiences regarding ghosting other participants were more reluctant to acknowledge their disjunctive attitudes. As Chanel (21, Black woman) indicated, 'I only do it to people who are crazy. But I'm not crazy, so they don't need to be doing that to me'. Similarly, Rob (23, White man) said: 'I'm not doing it on purpose, so it doesn't really count. But, the one time it happened to me I know she was just ignoring me to piss me off. And so that's different'. As Rob's comments indicate, intent could help to explain whether or not ghosting is justified. As he notes, he did not do it on purpose, and so he saw his actions as less objectionable; but when it happened to him, the action was interpreted as being purposely hurtful. These ideas are further unpacked in the themes related to uncertainty and undefendable ghosting acts.

Uncertainty. Although participants largely believed ghosting was par for the course in romantic and sexual exploration, they also strongly agreed that the uncertainty that accompanied ghosting was one of the hardest resolutions to make in accepting that interaction with the other person was likely over. When discussing this uncertainty, participants frequently used words such as 'anxiety', 'insecurity', 'mysterious', and 'frustrating' when trying to indicate

how being ghosted made them feel. In some instances, such frustration emerged because explicit conversations about ghosting out had been engaged with the person before she or he ghosted out. These conversations could be indirect, such as the one described by Brandi (22, White woman) shared:

> I was kind of, he knew, like before we started talking I told him, 'I've been lied to before, just don't lie to me, be honest.' He was like, 'I promise, I wasn't raised that way!' After being ghosted by the man, he responded that he, 'was, like, alright, whatever' and indicated that he saw being ghosted both as a form of uncertainty and a way of being lied to regarding promises made about the developing relationship.

In addition to feelings of deception that, as one participant stated; 'leaves you feeling like you don't know what you can trust when you're trying to get to know someone', it was also common for participants to indicate that they ruminated about what they had done wrong or what was wrong with them that would make someone ghost out. This confusion applied to both short-term relationships ('For a few days we were texting constantly and then poof. She was gone'), as well as longer relationships, as Teddy (27, White man) indicated: 'The really confusing one is when it is a serious relationship and all of the sudden they are like, yeah, no, just bye. And just fall off the face of the earth'.

In most cases, participants placed the blame back on the person who ghosted. As a Billy Jo (20, White woman) argued:

> If you have the guts to show your interest in the first place, you should have the guts to tell them you are not interested anymore. And it's, uh, respecting the fact that they have feelings …. and other people will be very upset by this. Even if you think they won't be.

Relationships skills sets. Another dominant theme involved how ghosting both involves a lack of communication skills as well as a sense of maturity. As one participant quipped, 'It's called knowing how to do a relationship'. Although most participants were not direct, they did lament the inability of many people to simply communicate their wants and needs. In discussing the breakup with her mom, Sarah (21, White woman) stated: 'Like my mom agreed with me when we like talked about it…and we both kind of agreed his is a nice guy but you know he obviously can't handle thing like a, you know tough person'.

In this data we see Sarah's ex-lover described as a weaker person, unable to handle what might be a more difficult conversation. In other instances, the ghosters were able to explain the relational exit as caused by a limited communication skill set. Garth (21, Caucasian male) explained the reason for him ghosting out on a relationship:

> When I was trying to cut off the relationship I didn't how to text her or call her and be like hey, umm I can't do this you know I don't really want to start a relationship right now. Umm… that would have been much easier to say versus hey I don't like you anymore, you know? That was the worst … or like most afraid of, 'cause I felt like she

was going to be really shitty, when I told her, hey I don't like you anymore.

In this account, Garth points to both a limited skill set and his fear of how others might respond, explaining that ghosting seemed to be an easier option.

Undefendable instances. Whereas the other themes that emerged from the thematic analysis often indicate that ghosting is a necessary evil in a digitally-mediated dating world, particular relationship qualities or situations made some instances of ghosting undefendable. As participants indicated, ghosting was especially considered egregious in long-term relationships or when one or both individuals in the relationship were emotionally attached. As one example, Sam (21, White woman) described the impact of ghosting in her long-term, committed relationship:

> **Sam:** I didn't mention this before but the day after my birthday he proposed to me and I didn't give him a definite answer, and so we were kind of like on the rocks about it, and then we started fighting more and then the day, I think it was like a week or a little bit after he just was like never mind I don't want to be with you anymore like that's it…
>
> **Interviewer:** So, like how long in between when he proposed and he just stopped talking to you?
>
> **Sam:** And he just stopped talking to me? A week.
>
> **Interviewer:** Can you tell me the bigger story of the relationship like who initiated it, how you maintained it, or anything else you think I should know?
>
> **Sam:** Uhm, it was really sudden when he stopped talking to me and I think since we were together for so long and I was really dependent on him it really affected me, uhm, it probably affected me more than like a typical college relationship because people stay together for a few weeks and then they just stop talking, like we were together for a long time and it was really serious and then he just stopped talking.

In this instance, the fact that the couple was close enough to be at the point of proposal made the relational ghosting especially problematic for Sam. Although she is not excusing people who have only been together a 'few weeks', her words do mark that ghosting is to be expected in some relationships and not others. In another example of marking time, Brandi (22, White woman) also distinguishes between long-term and shorter relationships:

> I try to forgive and forget. It's not like we were dating for five years, you know what I mean, if I saw him I wouldn't go up and give him a big hug but I'd be like I'd smile and make him see that I was happy.

Brandi, like others who were interviewed, also indicates that she would do her best to see as if she would not care if she came across the man who ghosted her. Interestingly, such a

performance contrasts with the uncertainty and hurt that participants reported they were feeling from the ghosting interactions.

ANALYSIS 2: A TYPOLOGY OF JUSTIFICATIONS FOR GHOSTING

Collectively, the results of the thematic analysis indicate that ghosting involves uncertainty, is viewed as happening when relationship skills sets are inadequate or deficient and can sometimes be an undefendable act. Despite all these negative attributions related to ghosting, participants also indicated that they did the act themselves and offered justifications. Based on the disjunctive nature of how participants talked about ghosting—specifically, that they often condemned it as a practice but also justified how they had done it themselves—we decided to move to a second research question and a second analysis of the data to dig deeper into the justifications participants were offering for why they ghosted others.

The taxonomic analysis in response to RQ2 revealed three ways that participants rationalized ghosting - relational, situational, and protective reasons. Relational justifications were instances in which individuals noted that something about their relationship made the ghosting behavior acceptable. Situational justifications framed the ghosting as necessary based on the confines of the way that the relationship first started. Finally, protective justification offered individual reasoning based around self-care as to why ghosting was the best choice. Each is explored more in-depth and paired with data exemplars here.

Relational justifications. Comments centered on the limited nature of the interpersonal relationship. Echoing the thematic analysis presented earlier many of the sub-themes represented here spoke to the idea of the ghosted relationship as being 'less than' a more substantive or 'real' relationship. Along with their justifications for ghosting, participants frequently commented about why these relationships warranted less-than-normal levels of communication.

Meeting someone else. Many participants spoke about moving on and finding someone else as the key reason why they ghosted out on a relationship. Not only was this justification used by those who ghosted others, but also as speculation by those who were ghosted and not sure why. Some participants were able to confirm their suspicions through hearing from others or by seeing a person's other social media. As Dawn (21, White woman) described a relationship in which she experienced ghosting:

> It was my first relationship getting back into it so I was excited and then that happened and I was like 'why'. …. 'why would he do that? Is he like that?' …. And then I saw on Twitter kissy faces from his ex-girlfriend and I'm like 'ohhh this makes sense'. And I text him back I'm like 'you asshole'. I mean I didn't text him back. I text him again and was like 'you should have just told me and been honest with me, instead you led me on and that pisses me off'.

In this instance, her ex-lover appears to have exited the relationship without communication

because of another relational partner, in this case an ex-girlfriend. Other time individuals who were ghosted on were able to make sense of the situation by attributing it the possible relational other even when that other was not apparent in the interactions. This could be seen in the words of Chanel (21, African American woman):

> I didn't really see anything that I felt really would cause the ghosting, which gets back at my first point before like I had no warning. Basically, but, um, I mean if I have to guess like a guy, he probably, I mean he's a guy, he probably saw another girl that he was interested in, and wanted to pursue her or whatever, and then just stopped talking.

At other times, individuals who had ghosted out on relational partners attributed this choice to the presence of another individual, like we see in the words of Jackie (22, White man):

> I was texting a girl and told her that we should go out sometime or get some dinner sometime and in like the next week or two. I didn't have much contact with her and so I didn't think she seemed interested, so I started talking with another girl. So, I pretty much just stopped talking to her and then she sent me a text even that asked when we were gonna go on that date and I never responded to the text.

For Jackie—and others—it was easier not to respond than it was to write and explain what had happened. As another participant indicated, 'Bringing up that you met someone else would make it even more awkward. Just leave it alone'.

The relationship never became serious. Discussing a relationship as less than fully actualized provided individuals with another route to establish a warrant for ghosting. Often both individuals who experienced ghosting as well as those that had ghosted in the relationship talked about the limited nature of the relationship that they exited. Matt (23, Black man) described his instance of ghosting as:

> The last, that wasn't very serious … and it was, a connection through a mutual friend. So, he gave his number to my friend who works at a bar, and he's told him to send it to me to text him. So, I got the number, so I actually texted him first. … And then, I hung out with him a couple times that week. And then I just got exhausted of it, either or I just didn't feel like hanging out with him anymore.

Similarly, individuals who were left ghosted, were also able to dismiss an instance of ghosting like Victoria (38, White woman) said 'It wasn't like, I knew it wasn't someone I was gonna be with forever'. Others indicated that they knew the relationship would not ever become serious because friends or family members had already seemed to reject the person and indicated that explaining this to someone would likely be worse than simply ghosting out.

No one was ever led on. As established in the thematic analysis, in relationships that were characterized as uncommitted, exiting the relationship via ghosting was more acceptable. In this second analysis, this theme played out in a slightly different context: based on the idea

of whether the person being ghosted was ever led-on. In other words, participants believed ghosting was justified when the relationships were not serious to begin with. For example, Sam (21, White woman) explained:

> Then one day I just didn't text him back. And I feel bad looking back now, because I know how it felt a bit, I think it was a difference. Because I told him, like, from the beginning that I just wanted to be friends. And we were only texting maybe five days. You know what I mean? So, it's not like we were anything really. We were just friends.

In an instance that is different-but-related, Chester (25, White man) discussed the importance of ghosting when a friends-with-benefits situation became problematic. As he explained: 'I never wanted it to be more than that and I made that clear. Then, I kind of stopped responding because I didn't think I could make it clear anymore. It just became uncomfortable for me'. For Chester, ghosting was justified because he tried to explain that the relationship was not going to become more serious, even if his ghostee did not seem to accept his explanation. For him, ghosting had to occur so that his former romantic interest would not feel led on.

Evading hurt feelings. As has already been demonstrated in the presentation of some of the results already presented in this study, many participants indicated that their use of ghosting helped to avoid awkward situations or, in other cases, hurting another's feelings. As Sam (21 White woman) shared:

> I was . . . not interested in this guy. Like, I have no idea what I'm going to say to him, and I didn't want to be rude… so I just didn't text back and then, eventually, like, I figured he would get the hint. But he didn't and he ended up texting me seven more times.

Although her attempt was not immediately successful, Sam believed the man she was ghosting would get the hint that she was not into him; and that ignoring him was easier than confronting him with an awkward truth. Others echoed this attempt to protect the other's emotions, such as Victor (38, White man) who stated that 'I didn't want to hurt the person I think'. Other ghosters talked about instances where they could not handle their relational partner's emotional honesty and then ghosted, like LaQuisha (22, multi-racial woman) who said:

> The short term one, I ghosted on him. It was kind of um, his message was basically like you know I know that you do this kind of often. But I'm trying to show you that I'm different, and I know you've told me that people don't show that they're serious and then you kind of don't take them seriously. So, I'm trying to show you that I'm serious. I feel like that kind of stuck out, because he was kind of being genuine about it. But, at the same time, I kind of just knew that I didn't want to be with him.

As LaQuisha's account illustrates, ghosting can be justified by indicating that it was a way to keep the relationship from becoming too serious. Ignoring seems less awkward than explaining that the relationship is not going to become serious.

'Empty texts'. Another justification for ghosting offered by participants was that their texting conversations were going nowhere – something that one participant referred to as the sending of *empty texts*. Such empty texts allowed interaction to continue, but—as the name would suggest—the conversation was not meaningful and did not advance the relationship. Thus, not responding seemed to be justified. Some participants disclosed that they were the ones creating empty texts, like Chanel (21, Black woman) who shared that 'Yeah, towards the end I don't think I really, you know. Word—one-word answers, type of thing. I wasn't really giving him much to go off of'. Similarly, Sam (21, White woman) described her relationship prior to ghosting by stating that 'We were just texting about random stuff, like you know what I mean? Nothing serious. So that is part of why I think it wasn't, I don't know, I'm sure it still sucked for him'. Chester (25, White man) put it succinctly, noting: 'We were texting about nothing. Then it stopped'.

Situational justifications. Whereas the previous category in this ghosting justifications typology dealt with issues related to the development of a relationship, *situational justifications* deal more with the context of how people started to interact or specific situations that, from the view of the participants, gave them more leeway to ghost out on the person. Although these are relational in nature, participants were clear that their intent for ghosting was not so much personal as it was the situation.

The person was met on a dating app. A common acknowledgement for placing the ghosting relationship on a second tier of relational importance was noting that the relationship started from an online dating application. Participants were quick to suggest that dating apps influence the cultural norms. Individuals see the plethora of possibilities, like Margaret (20, White woman) who stated:

> It was nice, like, it's so easy. .…. The other thing was, since it was from Tinder or be-cause of Tinder, Tinder gives people like this whole new idea of like, who is interested in them. Because usually we don't have a running list of like, people who are interest-ed. So, I think I never ghosted anyone up until that point. And so, I think I really just had a confidence that like, the likelihood of me finding someone else that was more compatible was like, really strong.

Similarly, Sage (24, White woman) spoke about the influence of dating apps on a generation of daters suggesting that current dates might have different understandings of relationships, stating:

> Maybe it's a thing with our generation. I personally believe that we have so many options and, you know, I don't have dating apps or anything anymore, but when I did it's like you're sitting there and you can, like, scroll through, you know, hundreds of guys in less than 10 minutes. And you're like, oh they – I don't know. There's just so many options and I think that, because of that, it's easy to, it's easy for people to just, like, let people go. And ghost them.

Finally, others suggested ghosting was an outcome of the specific relationships that started

online, like Jackie (22, White man):

> I mean I think when people use Tinder, those people get ghosted. Like, there is a lot of ghosting that goes on in Tinder. So, I mean if that other person isn't like, down to hook up that night or something, like that then that person probably gets ghosted.

Notably, even though participants indicated dating apps were what allowed people to feel as if they had the right to ghost others, few shared instances where they ghosted someone simply because they met them on a dating app. This lack of stories might indicate that dating apps and the fears associated with them is more of a social discourse than a personal one.

Alcohol or drugs were involved. Others justified their ghosting behaviors by indicating that when they met the other person and started a texting relationship, they were drunk and on drugs. Thus, it was expected that they would not be expected to continue interaction. As Chester (25, White man) explained: 'I was drunk, she was drunk, so we exchanged digits. We texted that night, but then I just never answered. I doubt she thinks about it because we were both so drunk. It is what it is'. Similarly, LaQuisha (22, multi-racial woman) shared: 'On my 21st birthday, you know, I was of course intoxicated. And he kind of tried to feel me up. And I really wasn't in the mood for that, and so I literally was like, yeah, you're gross. And kinda just cut that off'.

In LaQuisha's instance, she ignored texts from the man because of what he did while he was drunk — a different context than was explained by Chester. Still others shared instances of being ghosted after they over-shared due to the influence of drugs or alcohol. As Barkington (27, White woman) explained: 'I probably said that I loved him or something, you know, whatever. But I mean, knowing how hyped up on morphine I was, it probably sounded like I was drunk or something. And he wouldn't contact me after that'.

Age/maturity. A final situational justification for ghosting involved the age and maturity level of the participant. To be clear, this is not to suggest that age or maturity differences led to problems for the potential or ongoing sexual/romantic relationship; but, rather, that interview participants justified their ghosting behavior as being the result of their young age and immature actions. For example, Rodrick (25, White man) indicated ghosting was something he did 'a few times when I was younger'. Chester (25, White man), similarly indicated:

> It wasn't as much of a mature relationship, as in, there wasn't much discussion about those boundaries ahead of time. It [the ghosting] was more just kind of something that happened. I was also younger for this one, which probably plays into it.

Chester later indicated that because he is older now, he does not ghost out on people any more. Because most of the participants for this study were young adults, we also interviewed some older participants to get a sense of comparison. Notably, they too saw ghosting as a 'young' behavior. For example, Heather (46, White woman) explained ghosting situations from when she was younger. As she shared: 'Well we decided he was a jerk (laughing) cause that's not nice, you don't do that as a grown person. Maybe when you're a young one and you're not

capable or understand how to communicate or treat someone'. Again, in this quote, ghosting is affirmed as normative behavior for the young, but something individuals should grow out of as they age and mature.

Protective justifications. Finally, individuals often appealed to issues of self-protection and the importance of safety in framing their justifications for ghosting. Sub-themes ranged from behaviors that was offensive to behaviors that were more threatening or dangerous.

The person was disrespectful. Participants were often able to recount times in which had felt hurt or talked about instances of disrespect as natural justifications for why ghosting should occur. Barkington (27, White woman) stated, 'I think that if a relationship isn't healthy, or if somebody is, you know, like, if things are coming to a natural and another person is harassing you or whatever, I think it's fine to just check out'. Along those same lines, other participants recalled instances of hurt in their relationships that prompted them to engage in ghosting, such as Chanel (21, Black woman):

> Well, in my situation with that one friend, it was the disrespect. Like someone being openly, like, just obviously disrespectful to you. That definitely makes you step back and, just, like you know. Re-evaluate what's right.

In these instances, participants did not feel as if the behavior was aggressive or abusive – but, rather, that disrespectful communication warranted ghosting as a (non)response strategy.

The person was aggressive or abusive. In other instances, behavior crossed the line from being disrespectful to being aggressive or outright abusive. In these instances, ghosting was viewed as a necessity for self-protection from further or potential harm. Notably, it was only women in the study who shared such stories. In several instances, the communication described was aggressive in nature. As Pia (20, White woman) shared:

> This past summer the guy was texting me and I didn't really know if he thought we were more than what I thought, I thought it was just straight friendship, he wanted more. I quit responding and then he texted me over 50 times. It was crazy and I just, like, straight never responded.

Similarly, Mary (18, White woman) ghosted when an overly interested friend would not take no for an answer:

> We were just friends and he started, like, asking me out on dates. And I made it clear that I wasn't interested. But he still kept texting me asking me out on dates so I like slowly I just stopped responding.

In Mary's situation, the persistent nature of her friend's unwanted requests for dates made it feel as if it were essential for her to ghost. Similarly, Bella (27, White woman) described an instance where she felt unsafe and decided to ghost:

I'm thinking of a time where I knew someone who was interested in me, and I wasn't interested in them, so I didn't think of it as a romantic relationship. But they did, and even though I very clearly was like, I'm not interested in dating, they kind of got pushy and aggressive. And I stop talking to them . . . Because I felt kind of weird about it. And almost, like, unsafe? So, I would say in a situation like that, I would tell them that that might not be a bad choice to stop talking to the person.

One woman even shared that she ghosted in response to unwanted sexual language. As Sage (24, White woman) indicated: 'Um, well you know the uncomfortable situation of, [laughs], you know someone like says they want to jerk off to you, on the first date, then yeah, that could do it'.

Discussion

In line with past research[36]—the young adults who participated in this study indicated that ghosting is a sometimes-hurtful, often anxiety-inducing, and frequently uncertainty-laden practice. Those who are involved with ghosting appear to have disjunctive attitudes regarding its impacts and appropriateness. That is, people tend to explain ghosting as inappropriate, immature, and sometimes hurtful when talking about how others have done it to them; yet, when talking about their own complicity with ghosting, they often have justifications for why it was appropriate.

Along those lines and moving into a second key finding in this research: Ghosting appears to be rather complex, at least in terms of how it functions emotionally. Based on participant explanations, ghosting can be a way of protecting themselves and others. As one example, many justified their ghosting practices by noting that it avoided awkwardness and allowed them to minimize embarrassment. Future research should explore the face saving[37] aspects of ghosting. Would someone rather have a concrete answer as to why the relational communication ceased? Or would they rather face uncertainty in lieu of hurt feelings or embarrassment? Answers to these questions might inform the ethics of ghosting. Further, some participants—notably, all women—indicated that ghosting was a way of protecting themselves after being disrespected, experiencing aggressiveness, or even experiencing harassment. Future research should examine ghosting as a form of protection – particularly through feminist[38] or sexual assault[39] lenses.

36   LeFebvre, Phantom lovers; Manning et al., *Ghosting*.

37   Goffman, E. (2017). *Interaction ritual: Essays in face-to-face behavior*. London, UK: Routledge.

38   Manning, J. & Denker, K. J. (2015). Doing feminist interpersonal relationship research: A call for action, two methodological approaches, and theoretical potentials. *Women & Language, 38*(1), 133-142.

39   Ivy, D. K. (2016). College students' sexual safety: The verbal and nonverbal communication of consent. In J. Manning, & C. M. Noland (Eds.), *Contemporary studies of sexuality & communication: Theoretical and applied perspectives* (pp. 47-62). Dubuque, IA: Kendall/Hunt.

DISJUNCTIVE VIEWS OF GHOSTING

In addition to the meaning regarding ghosting that has been established in this study, the use of coordinated management of meaning as the theoretical focus also demands consideration about where meaning is not being made. Although the disjunctive nature of ghosting is most represented in this study by participant attitudes regarding the practices as inappropriate or justified, these disjunctive views also call into question how other aspects of ghosting might be disjunctive. For example, LeFebvre[40] identifies ghosting as a form of relationship dissolution; and yet, participants in this study often call into question whether a relationship has ever started. As the data reflect, many forms of ghosting are indeed relational and, when sub-themes are considered, make up the largest number of justification types. Yet one of the categories sets up the notion that, at least from the point of view of participants, a relationship was never started; and, as a result, participants did not feel as if responding to a text message or other communication prompt was required. Given that these data were one-sided, with only the ghoster being interviewed for the study, would the ghostee interpret the lack of communication in the same way? Further, might a concept such as Duck and Gilmour's[41] pre-existing doom be a better fit for some instances of ghosting rather than a stage model? Future scholarship should address these possibilities.

Moreover, even though they are not explored in this manuscript, gendered differences might be happening in the interpretation of ghosting behaviors. These differences are especially prominent in the subthemes regarding disrespect and abuse. Future research should examine these gendered differences and examine, for instance, whether women ghost because they feel unsafe more than men.

EXPANDING GHOSTING RESEARCH

Notably, the participants in this study were mostly White and, with a few exceptions, aged 18-25 years. The examples listed in this manuscript are also largely heteronormative in nature. Future research about ghosting must evade the White, often heteronormative nature of interpersonal communication studies to be more inclusive. As two key examples: research indicates that Black people[42] and those who identify as gay, lesbian, or bisexual[43] often have different social media practices. How might that play into research about ghosting? Moreover, it is evident from this study and an earlier study[44] that older people are involved with ghosting, albeit in different, sometimes non-technological ways. What might research involving older participants teach us about ghosting as a practice that happens across the lifespan? Finally,

40   LeFebvre, Phantom lovers.

41   Duck, S. & Gilmour, R. (1981). *Personal relationships: Dissolving personal relationships*. New York, NY: Academic.

42   Ruths, D. & Pfeffer, J. (2014). Social media for large studies of behavior. *Science, 346*(6213), 1063-1064. doi:10.1126/science.346.6213.1063.

43   Fuchs, C. (2017). *Social media: A critical introduction*. Thousand Oaks, CA: Sage.

44   Manning et al., *Ghosting*.

given that ghosting is reported to be a global phenomenon[45], what could cross-cultural research reveal about the practice of ghosting in non-Western cultures?

Conclusion

As interpersonal relationships continue to be influenced both directly and indirectly by the development of computer-mediated technologies, new—or, more likely, newly-named—practices such as ghosting will almost certainly be a part of public discourse. As the results of this study indicate, anxieties and uncertainties abound in discourses related to ghosting. Participants indicated that ghosting involves uncertainty, is a sign of having poor relationship skills, and can often be undefendable as a way of ending a relationship. Yet, even as these participants pointed to the negative aspects of ghosting, they also defended why they chose to ghost others. Further exploration of justifications for ghosting include face saving in the face of a relationship that is not developing in a satisfactory way; situations where ghosting is expected, such as when meeting someone online for a hookup or when drunk or under the influence of drugs; and, importantly, when someone is being disrespectful or even abusive.

Future research can enhance these findings by quantifying the prevalence and impact of ghosting; exploring deeper the disjunctive nature of ghosting as a practice, especially in terms of relational dissolution and respectful communication practices; and by expanding to different populations.

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45 Harasymchuk, Ghosting.

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D E S I G N

9: 'I ❤ U': A SEMIOTIC ANALYSIS OF ROMANTIC RELATIONSHIP BITMOJIS ON SOCIAL MEDIA

ABDULGAFFAR O. ARIKEWUYO, BAHIRE EFE-ÖZAD, AND AMINAT S. OWOLABI

Social media platforms have made expressions of love, affection, and disappointment between romantic partners simple and seamless. However, Prensky[1] noted that some people, who may be referred to as *Digital Natives*, are familiar with the language of the computer, games and social media, while others, the *Digital Immigrants*, are struggling to learn it. The Digital Natives have been able to decode the technicalities associated with the various social media platforms, even with their recondite features, so they find communication pleasurable.[2] The use of social media amuses its devotees and has immense effects on them.[3] Though digital immigrants on their part struggle to familiarize themselves with innovations, they usually adapt over time due to frequent training and use.

The need for fast, easy and seamless communication prompted the use of *shorthand* while typing on social media platforms. The shorthand was devoid of any form of humor, excitement or (in more intimate conversations) romance, and still generated debate because of Digital Immigrants' difficulties with understanding and decoding it during interpersonal conversations. *Emojis*[4] and *smileys*[5] were introduced to generate excitement and to enable users to communicate with signs and symbols, but they are also assumed to be problematic because many receivers (and not a few senders) have difficulty decoding them.[6] Thereby, reading (or passing on) a wrong or unintended message becomes salient. Emojis and smileys may, therefore, fail to reflect the real identity and intention of senders.

Bitmojis[7] are one of the newest sign-and-symbol applications used to communicate in social media platforms. Each instance of a bitmoji is potentially unique because the user can customize the bitmoji symbol in different ways, including customizations of dress, hairstyle, facial features, footwear, eye color, eye size, and eyebrow appearance. Bitmojis have grown to become popular on all social media platforms and are frequently used by romantic partners

1   Prensky, M. (2001). Digital natives, digital immigrants part 1. *On the Horizon, 9(5)*, 1-6. doi:10.1108/10748120110424816.

2   Li, C., & Wu, D. D. (2018). Facework by global brands across Twitter and Weibo. *Discourse, Context & Media*, *26*, 32-42. doi:10.1016/j.dcm.2018.03.006.

3   Iskander, E. (2011). Connecting the national and the virtual: Can Facebook activism remain relevant after Egypt's January 25 Uprising? *International Journal of Communication, 5*, 1225-1237.

4   Emojis are pictorial symbols available on the various social media platforms. They enable users to send messages with the use of signs.

5   Smileys are facial representations of emotions. They are popularly used in social media applications.

6   Zappavigna, M., & Martin, J. R. (2018). #Communing affiliation: Social tagging as a resource for aligning around values in social media. *Discourse, Context & Media, 22*, 4–12. doi:10.1016/j.dcm.2017.08.001.

7   Bitmojis are more flexible and easier to understand than emojis. Although they serve the same purpose, bitmojis can be customized while emojis cannot.

in conversation.[8] Many studies on emojis exist.[9] This study adds to the existing literature in adopting a semiotic approach to analyze the use of colors, codes and signs in some of the most popular romantic bitmojis.

Romantic Relationships and Social Media

Batlle, Carr and Brown state that 'human relationships have the capacity to provide people with the most intense feelings of happiness, fulfilment and satisfaction while they may also be the source for the deepest forms of pain, suffering and despair'. [10] In the context of this study, we argue that pain, suffering, and despair may occur when communication is ineffective or is not made attractive by any of the parties involved. A fruitful relationship, therefore, depends on the employment of all forms of verbal, nonverbal and interpersonal communication.[11] Relationships also thrive at various levels at work and school, as well as in groups, the family and the community.[12] Cornwell and Lundgren define romantic relationship as an intended or ongoing mutual relationship with the involvement of emotional, psychological, sexual and physical attraction.[13]

Social media has become one of the most indispensable tools to ensure effective and efficient communication in relationships, thus having become an interpersonal means of communication through which intimacy may thrive.[14] For instance, romantic partners can establish an uninterrupted communication process or avoid a third party in their communication, thereby helping to overcome the challenges of costs incurred in protecting their intimate romantic relationship from the hazards of discovery of sensitive information by a third party. Social media communication has been able to guide many casual relationships toward romance by keeping the conversation active without any form of interruption.[15] Many

8   Miller, H., Thebault-Spieker, J., Chang, S., Johnson, I., Terveen, L., & Hecht, B. (2016). "Blissfully happy" or "ready to fight": Varying interpretations of emoji. *Tenth International AAAI Conference on*, pp. 259-268.

9   Stark, L., & Crawford, K. (2015). The conservatism of emoji: Work, affect, and communication. *Social Media + Society, 1*(2), 1-11. doi:10.1177/2056305115604853; Vidal, L., Ares, G., & Jaeger, S. R. (2016). Use of emoticon and emoji in tweets for food-related emotional expression. *Food Quality and Preference, 49*, 119-128. doi:10.1016/j.foodqual.2015.12.002.

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13   Cornwell, B., & Lundgren, D. C. (2001). Love on the Internet: Involvement and misrepresentation in romantic relationships in cyberspace vs. real space. *Computers in Human Behavior, 17*, 197-211. doi:10.1016/S0747-5632(00)00040-6.

14   Rau, P.-L. P., Gao, Q., & Ding, Y. (2008). Relationship between the level of intimacy and lurking in online social network services. *Computers in Human Behavior, 24*, 2757-2770. doi:10.1016/j.chb.2008.04.001.

15   Gust, D. A., Shinde, S., Pals, S. L., Hardnett, F., Chen, R. T., & Sanchez, T. (2013). Correlates of health

relationships have metamorphosed from virtual to real space as a result of the level of intimacy generated by social media conversations.[16] Because people use social media to keep themselves busy, especially in leisure time, most people like to interact with those with whom they have a mutual or romantic connection rather than with those with whom they can only engage in formal or straightforward conversation.[17] This trait can also be explained with the fact that such informal interpersonal communication keeps the users entertained to an extent.

Social media communication has also served to help partners improve the level of romance in their relationship. Often, in the burgeoning stage of a relationship, partners feel more comfortable to use social media rather than face-to-face interaction for personal conversations about romantic aspects.[18] Emojis and bitmojis add vitality, fun, excitement and humor to these interactions and conversations.

Not always, however, using social media in building relationships has been fruitful as expected. Improper communication skills, lack of interest from one of the participants and lack of dedication and commitment are the main reasons why social media is unable to assist in building a lasting relationship.[19] Though it is understandable that social media conversations may not always be satisfying or lead to satisfaction in relationships,[20] it is also clear that the roles played, and effects caused by social media avatars or bitmojis cannot be underestimated and that they may be beneficial in reducing unwanted gaps in communication between romantic partners.[21]

Although social media platforms often aid in establishing social relationships, the transition to romance depends on the level of access granted to each user by the other, something that may change as time passes by.[22] For example, users may be friends on Facebook, Instagram or Twitter, following each other and frequently using simple bitmojis to communicate; however, as soon as their conversation matures, they become better connected to each other and start

attitudes among homosexual and bisexual men. *Journal of Epidemiology and Global Health, 3*, 31-39. doi:10.1016/j.jegh.2012.12.006.

16   Cornwell & Lundgren, Love on the Internet.

17   Huffman, S., & Szafron, M. (2017). Social correlates of leisure-time sedentary behaviours in Canadian adults. *Preventive Medicine Reports, 5*, 268-274. doi:10.1016/j.pmedr.2017.01.007.

18   Huffman & Szafron, Social correlates of leisure-time sedentary behaviours in Canadian adults.

19   Suleiman, A. B., Galván, A., Harden, K. P., & Dahl, R. E. (2017). Becoming a sexual being: The 'elephant in the room' of adolescent brain development. *Developmental Cognitive Neuroscience*, *25*, 209-220. doi:10.1016/j.dcn.2016.09.004.

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21   Suleiman, A. B., & Harden, K. P. (2016). The importance of sexual and romantic development in understanding the developmental neuroscience of adolescence. *Developmental Cognitive Neuroscience, 17*, 145-147. doi:10.1016/j.dcn.2015.12.007.

22   Podobnik, V., & Lovrek, I. (2015). Implicit social networking: Discovery of hidden relationships, roles and communities among consumers. *Procedia Computer Science, 60*, 583-592. doi:10.1016/j.procs.2015.08.185.

using romantically-oriented bitmojis in their conversations.[23] Romance is thereby facilitated.[24] With social media, there has been rapid growth in new relationship formation, specifically with online friends.[25]

Social media networks offer their users a series of opportunities to create platforms where they can develop self-confidence, express themselves and gratify their desires to communicate with their intimate friends.[26] Through social media, users learn about other people and co-create a communication platform where relationships are molded, and maybe broken walls are mended. Because of the tone of romantic relationships, conversations between romantic partners oftentimes carry sexually charged meanings, mostly facilitated by pictorial messages (bitmojis) between the participants.[27] Prensky explains the crucial role of graphics in social media, stating that 'Digital Natives are used to receiving information really fast.[28] They like to parallel process and multi-task. They prefer their graphics *before* their text rather than the opposite'. Figure 1 demonstrates this point. The long routine text is given life when a miniscule detail of a reading emoji is added.
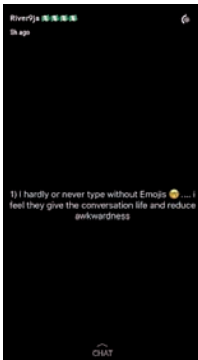
Figure 1: Snapchat conversation excerpt.

23   Nelsona, E. E., Jarchoa, J. M., & Guyerb, A. E. (2016). Social re-orientation and brain development: An expanded and updated view. *Developmental Cognitive Neuroscience, 7*, 118-127. doi:10.1016/j. dcn.2015.12.008.

24   Suleiman & Harden, The importance of sexual and romantic development in understanding the developmental neuroscience of adolescence.

25   Demirtas-Zorbaza, S., Genctanırımb, D., & Kurtc, A. (2015). An overview of young adults' opinions into cyber relation. *Procedia - Social and Behavioral Sciences, 186*, 91-94. doi:10.1016/j. sbspro.2015.04.034.

26   Seidman, G. (2013). Self-presentation and belonging on Facebook: How personality influences social media use and motivations. *Personality and Individual Differences, 54*, 402—407. doi:10.1016/j. paid.2012.10.009.

27   Salerno, A., Tosto, M., & Antony, S. D. (2015). Adolescent sexual and emotional development: The role of romantic relationships. *Procedia - Social and Behavioral Sciences, 174*, 932-938. doi:10.1016/j. sbspro.2015.01.714.

28   Prensky, Digital natives, digital immigrants part 1, 2.

Method

THE CONCEPT OF SEMIOTICS

Adamo defines semiotics as the study of the meaning of information transmitted from sender to receiver and vice versa through signs and signals.[29] Semiotics intends to describe a particular point of view rather than to critique approaches to communication.[30] It is best practice to grasp this intention when looking at the results of semiotic analysis. Friedman and Smiraglia explain that *meaning* is 'something one makes from signs by oneself because it is not inherent'.[31] Therefore, the meanings attached to the signs analyzed in the present study are derived from the signs as they appear in everyday use. We employ semiotic tools to analyze bitmojis used to convey romantic intentions. We also attempt to deconstruct the meanings of various icons, indexes and symbols involved while ensuring that their meanings and directions are not changed.[32]

PROCEDURE

To select the six bitmojis analyzed in this study, we conducted an online survey among 377 undergraduate students at Eastern Mediterranean University, all currently involved in romantic relationships. Among the respondents, 282 (74.8%) were males, while 95 (25.2%) were females. The survey presented 20 romantic bitmoji avatars available at the time of the study and asked each student to select the one that they used most often in communicating with their romantic partners. At the end of the survey, six which were the most frequently used were chosen for the analysis (Figure 2 with 26.8%; Figure 3 with 19.1%; Figure 4 with 14.9%; Figure 5 with 13.3%; Figure 6 with 8.8%; and Figure 7 with 8.8%). We then employed icons and symbols categorization, taking into consideration the denotative and connotative color meanings.[33] In addition, we used the code system to look into the various romantic codes and their use and interpretation in romantic relationships.[34]

29   Adamo, G. E. (2013). An analysis of students' slang terms for academic activities in a Nigerian university: A semiotic approach. *Southern African Linguistics and Applied Language, 31*(1), 89-96. doi:10.2989/16073614.2013.793954.

30   Batua, B. (2012). An overview of the field of semiotics. *Social and Behavioral Sciences, 51*, 464-469. doi:10.1016/j.sbspro.2012.08.190.

31   Friedman, A., & Smiraglia, R. P. (2013). Nodes and arcs: Concept map, semiotics, and knowledge organization. *Journal of Documentation, 69*(1), 27-48, p. 32. doi:10.1108/00220411311295315.

32   Culler, J. (1979). Semiotics and deconstruction. *Poetics Today*, 137-141.

33   Adamo, An analysis of students' slang terms for academic activities in a Nigerian university.

34   Bateman, J. A. (2017). Triangulating transmediality: A multimodal semiotic framework relating media, modes and genres. *Discourse, Context & Media, 20,* 160-174. doi:10.1016/j.dcm.2017.06.009.

Analysis
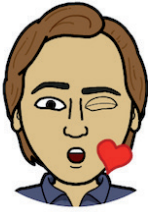
Figure 2: Affection expressed with a wink, an open mouth and a red heart.

Figure 2 displays a winking male bitmoji avatar with an open mouth, accompanied by a red heart signifying love. Red has many interpretations but one of its global associations is with love. Most romantic outings, events and engagements have a touch of red, even when it is not the dominant color. Red is also associated with desire, excitement and power. Red heart sign in the bitmoji is well-pronounced and clear even though it takes comparatively less space within the bitmoji.

A wink is a non-verbal, informal and light form of communication usually employed to deliver confidential messages aimed at a receiver who can decode it. Here, the combination of the wink, the open mouth and the red heart is intended to convey affection and care to a romantic partner. This bitmoji may be used to transact love between partners.

Figure 3: Affection expressed with a facial expression, words, hearts and the color of pink.

The display of codes and systems in Figure 3 has pink as its most dominant color, combining rose and hot pink to pass this bitmoji's message. Bright pink, mostly associated with the female gender, signifies love, affection and care. It is also strongly associated with the transmission and reception of nurture.

Pink is, therefore, appropriate when one partner is trying to nurture the other, especially when romance is involved. The red heart symbol is replaced here by rose pink. The letters, also in pink, have been given an aesthetic appearance through a creative distribution of typography, rendering them attractive while maintaining the main purpose of sending a romantic message to a loved one.

Also worth noting is the expression on the avatar's face. An enticing and affectionate message cannot be transmitted to a romantic partner with a straight face or a non-attractive look. Ideally, one romantic partner may send this bitmoji to the other partner after the pair have been involved in a pleasant act, or when a partner aims to express love.
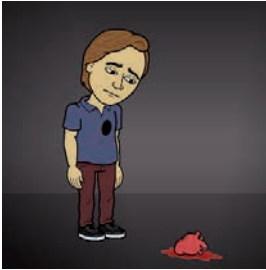
Figure 4: A heartbroken bitmoji avatar.

The avatar in Figure 4 is heartbroken, expressing disappointment and displeasure. This is made evident by using a combination of different shades of grey and black in the background and a fallen heart with a bloodstain on the floor. The red, fallen, broken and bleeding heart signifies disappointment and betrayal.

Furthermore, the avatar's facial expression emanates significant information to the receiver. Unlike other avatars in our study, this one wears a sad, sorrowful, sober and depressed look. The expression signifies that 'things are not going right', and most importantly, conveys the disappointment that usually comes with heartbreaks.

The different shades of gray and black also show that 'things are not going well'. Black in this context represents the dejectedness of heartbreak as well as remorse, anger, and misery. Heartbreak may arise between lovers who experience disappointment, unhappiness or displeasure with a specific circumstance in their relationship or romantic life. This avatar, thus, signifies the heartbreaking emotions.
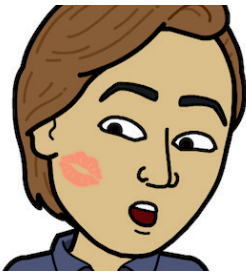
Figure 5: A bitmoji sends a kiss.

Figure 5 is a bitmoji avatar used to send a kiss from one romantic partner to the other partner. One of the most common interactions between romantic partners on social media is the blowing of kisses. This can happen when either partner receives cheering news or wants to express positive affection toward the other. With its red lipstick mark and a surprised

expression, this bitmoji may be well suited to experience pleasure, show support or to express some affection.
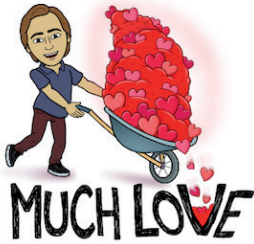
Figure 6: A bitmoji avatar describing the extent of love.

Figure 6 displays a combination of the codes and signs used to express love and romantic feelings during communication on social media. This bitmoji combines the use of red and pink within the love signs. Since red is mostly associated with romance, passion and love, usage of red in this bitmoji emphasizes the hidden love codes. Pink, on the other hand, is associated with nurture, love and sweetness. As the ongoing theme for the bitmoji is romance, the pink color is quite attractive and relevant in this context. The combination of pink and red, the main love colors, translates well into the typographically stylized 'Much Love' code. This is an affectionate way for romantic partners to compliment on each other and express their quantum of love. The excited face of the avatar is significant too; it helps the receiver to understand that excitement arises whenever there is 'so much love'. One romantic partner will, therefore, likely use this bitmoji to express depth of love for the other.

Figure 7: A bitmoji avatar displaying loneliness.

One of the most affectionate and popular messages lovers send to each other is 'I miss you'. This sentiment of longing is displayed in the bitmoji avatar in Figure 7, and we expect that lovers who are apart and feel each other's absence will tend to use this bitmoji. Loneliness is obvious. The use of purple is significant, as this color is associated with royalty and allows people to get in touch with their deepest thoughts. Yellow and green are also present on a white background. Yellow stimulates mental activities and generates muscular strength, while green symbolizes fertility, growth and harmony. These colors succumb to the present situation of the avatar who longs for the presence of his partner and makes it plain by his facial expression. This bitmoji uses the unbalanced seesaw to depict the desire of the sender who cannot balance without the partner on the other end. The overall effect is an expression of

desire and neediness. Romantic partners use this sign when they aim to describe the extent to which they miss their partner and to say how incomplete they feel without their missed one.

Discussion

The aim of this study was to analyze the use of colors, codes and signs in romantic-related bitmojis on social media. To the best of our knowledge, this is the first research on romantic relationships that applies semiotic analysis to examine the appearance of bitmoji avatars. Colors, facial expressions, signs and codes all form the basis of our analysis because the bitmojis have been tailored to use these elements to transmit their messages. They serve as effective, distinctive, attractive and romantic non-verbal codes to use in interpersonal communication through social media platforms.

The importance of colors in this study cannot be overstated. Red, yellow, white, pink and green are some of the dominant colors used in a variety of bitmojis. These colors are not only soft; they are also attractive and romantic. One of these, red, is relatively more dominant probably because of its association with love. However, other relevant colors appear also quite frequently in symbols and icons of bitmojis because they can deliver an appropriate message. The colors extend the affordance of the bitmoji avatars so that they can serve as a means of fostering romance. For instance, because the avatars can be customized by choosing the skin color, users have designed them to suit their specific needs and messages and to portray their subjects. This customization feature contributes to the bitmojis' self-marketing aspect, as do the attractive romantic colors on the embedded codes and symbols. More importantly, if the colors used in bitmojis were different—for instance, when 'You're the sweetest' in Figure 3 was written in black— then the bitmojis would have conveyed an entirely different message.[35]

The colors in these romantic bitmoji avatars play effective roles in communication by helping to create proper denotation without any misconception. Colors have been great tools for attracting human beings and speaking to their emotional value system.[36] It is also important to state that the colors used in various romantic bitmoji avatars are generally perceived as attractive, romantic and affectionate, as they are based on substantial traditional practice and culture. According to a Snapchat user, the use of graphics in her daily conversation adds life, fun, excitement and color to the conversation (see Figure 1). This confirms that the use of emojis and bitmojis in romantic conversations adds vitality to the relations. Aslam explains that 'traditional beliefs have influenced color preferences since antiquity'.[37] Though the colors vary in meaning in different instances, cultures and traditions, the connotative mode adopted in this study gives them meaning and assists us in understanding patterns of romantic communication.

35 Hynes, N. (2009). Color and meaning in corporate logos: An empirical study. *Brand Management, 16*(8), 545-555. doi:10.1057/bm.2008.5.
36 Gao, X.-P., & Xin, J. (2006). Investigation of human's emotional responses on colors. *Color Research and Application, 31*(5), 411-417. doi:10.1002/col.20246.
37 Aslam, M. M. (2006). Are you selling the right color? A cross-cultural review of color as a marketing cue. *Journal of Marketing Communications, 12*(1), 15-30, p. 16. doi:10.1080/13527260500247827.

We mapped bitmojis that appear in social media communication, decoded and analyzed several of them that are used to convey love. Future studies should quantify the frequency in which these bitmojis appear in social media communication, probe the reasons behind their usage, and measure the level of understanding of bitmojis and emojis during romantic conversations.

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10: VERIFYING IDENTITIES: THE ROLE OF THIRD-PARTY REPUTATION INFORMATION IN ONLINE DATING

LARA HALLAM, CHARLOTTE J.S. DE BACKER, SARA PABIAN, AND MICHEL WALRAVE

Online dating brings together strangers in an environment which often lacks real-time physical cues.[1] This inexistence of a shared physical context gives people the opportunity to take advantage of the existing anonymity in online dating platforms and to claim identities as they like.[2] The link between the online and offline identity is addressed by the warranting principle.[3] Whilst in offline dating people generally have an unquestioned and unambiguous warrant between the presented identity and the tangible body's self,[4] this is not the case in online dating. The question arises whether such a warrant could potentially be generated in online dating platforms. Inspired by online shopping environments, the idea of adding reputation information as a warrant has recently been implemented in online dating apps (e.g., *Do I Date* and *Once*). However, the effects have not yet been investigated. Consequently, this research aims to investigate whether adding third-party reputation information to an online dating profile could potentially serve as a warrant for online daters and could impact their perceived trustworthiness and their chances to go on an offline date.

The Warranting Principle

In general, people use identity claims to express who they are, yet there is a disputable connection between who online daters claim to be online and who they actually are.[5] Unfortunately, in online environments such as online dating which insufficiently require a warrant between the presented and physical self, individuals have a greater freedom to deviate from the online persona.[6] As DeAndrea corroborates, 'it is much easier for an adult to pose as a child online where complete anonymity is afforded than in person'.[7] The connection

1   Gibbs, J. L., Ellison, N. B., & Lai, C. H. (2011). First comes love, then comes Google: An investigation of uncertainty reduction strategies and self-disclosure in online dating. *Communication Research*, *38*(1), 70-100. doi:10.1177/0093650210377091.

2   Gibbs, Ellison & Lai, First comes love, then comes Google; Donn, J. E., & Sherman, R. C. (2002). Attitudes and practices regarding the formation of romantic relationships on the Internet. *CyberPsychology & Behavior*, *5*(2), 107-123. doi:10.1089/109493102753770499.

3   Gibbs, Ellison & Lai, First comes love, then comes Google; Walther, J. B., & Parks, M. R. (2002). Cues filtered out, cues filtered in: Computer-mediated communication and relationships. In M. L. Knapp & J. A. Daly (Eds.), *Handbook of interpersonal communication* (pp. 529-563). Thousand Oaks, CA: SAGE.

4   Walther & Parks, Cues filtered out, cues filtered in.

5   Walther & Parks, Cues filtered out, cues filtered in.

6   Walther & Parks, Cues filtered out, cues filtered in.

7   DeAndrea, D. C. (2014). Advancing warranting theory. *Communication Theory*, *24*(2), 186-204, p.186. doi:10.1111/comt.12033.

between online and offline identity verification is covered by the warranting principle and refers to the validation of the online identity claim with the offline persona.[8] The scope of the term warrant has recently also been extended to all cues that authenticate or legitimize the self-presentation of an online character.[9] Because no actual warrant exists when an individual creates an online dating profile, other users may be reluctant to trust the identity claims of virtual dating candidates.[10]

The warranting principle also implies that people will prefer messages which are harder to manipulate (e.g., third-party reputation information) over self-disclosed information.[11] Walther and Parks define the warranting value of information about an individual 'as being derived from the receiver's perception about the extent to which the content of that information is immune to manipulation by the person to whom it refers'.[12] Additionally, the source's status and characteristics might also play a key role with regard to warranting.[13] Different types of information can thus hold more or less warranting value depending on the source. The more a source is independent from the target, the more receivers will attribute credibility and warranting value to this source. In warranting terms, information provided by friends or people from an individual's social network will have more warranting value than self-disclosed information because these individuals hold the potential to point out false self-presentational information or to contradict certain identity claims.[14] Aside from friends' abilities to undermine the online representation of an individual, positive statements by social network connections can improve the impression of the online persona and its credibility.[15] Unfortunately, people in online dating often do not always have the necessary means at their disposal to check online dating candidates' identities.[16]

8   Gibbs, Ellison & Lai, First comes love, then comes Google; Ma, X., Sun, E., & Naaman, M. (2017). What happens in Happn: The warranting powers of location history in online dating. *Proceedings of the 2017 ACM Conference on Computer Supported Cooperative Work and Social Computing*, 41-50. doi:10.1145/2998181.2998241; Stone, A. R. (1995). *The war of desire and technology at the close of the mechanical age*. Cambridge, MA: MIT Press; Walther & Parks, Cues filtered out, cues filtered in.
9   DeAndrea, Advancing warranting theory.
10   Walther et al., Self-generated versus other-generated statements and impressions in computer-mediated communication.
11   Gibbs et al., First comes love, then comes Google; Ma et al., What happens in Happn; Stone, *The war of desire and technology at the close of the mechanical age*; Walther et al., Self-generated versus other-generated statements and impressions in computer-mediated communication.
12   Walther & Parks, Cues filtered out, cues filtered in, p. 552.
13   Walther et al., Self-generated versus other-generated statements and impressions in computer-mediated communication.
14   Walther et al., Self-generated versus other-generated statements and impressions in computer-mediated communication.
15   Walther, J. B., Heide, B. V. D., Kim, S.-Y., Westerman, D., & Tong, S. T. (2008). The role of friends' appearance and behavior on evaluations of individuals on Facebook: Are we known by the company we keep? *Human Communication Research*, *34*(1), 28-49. doi:10.1111/j.1468-2958.2007.00312.x.
16   Gibbs et al., First comes love, then comes Google.

From Online Shopping to Online Dating: Third-Party Reputation Information as a Potential Warranting Tool

Online dating and online shopping show similarities. For instance, real shops have a physical limit on the number of products and online shops are virtually limitless with thousands of different items.[17] Similarly, offline dating also has a perceived physical limit on the number of potential partners you can meet while online dating offers a much larger number of potential mates.[18] This extended supply has resulted in people filtering through online dating profiles.[19] Previous research also identified similar search and system characteristics between online dating and online shopping.[20] In both domains, the problem of option abundance fosters existing choice difficulty (i.e., mate-choice challenge),[21] and algorithms which recommend items or human referees are consulted to increase the success rate.[22]

In e-commerce, products are not solely recommended by computer algorithms but also by other online users by means of reputation information. Previous studies have revealed that reputation can have an impact on trust formation.[23] Moreover, reputation information features are often used to induce trustworthiness.[24] This mental association between third-party reputation information and trustworthiness is driven by the reputation heuristic that

17 Fasolo, B., McClelland, G. H., & Todd, P. M. (2007). Escaping the tyranny of choice: When fewer attributes make choice easier. *Marketing Theory*, *7*(1), 13-26. doi:10.1177/1470593107073842.

18 Fiore, A. T., & Donath, J. S. (2004). Online personals: An overview. *CHI2004*, 1395-1398; Lenton, A. P., Fasolo, B., & Todd, P. M. (2008). Shopping for a mate: Expected versus experienced preferences in online mate choice. *IEEE Transactions on Professional Communication*, *51*(2), 169-182. doi:10.1109/TPC.2008.2000342.

19 Frost, J. H., Chance, Z., Norton, M. I., & Ariely, D. (2008). People are experience goods: Improving online dating with virtual dates. *Journal of Interactive Marketing*, *22*(1), 51-62. doi:10.1002/dir.20107; Heino, R. D., Ellison, N. B., & Gibbs, J. L. (2010). Relationshopping: Investigating the market metaphor in online dating. *Journal of Social and Personal Relationships*, *27*(4), 427-447. doi:10.1177/0265407510361614; Lenton, Fasolo & Todd, Shopping for a mate; Lenton, A. P., Fasolo, B., & Todd, P. M. (2010). Who is in your shopping cart? Expected and experienced effects of choice abundance in the online dating context. In N. Kock (Ed.), *Evolutionary psychology and information systems research: A new approach to studying the effects of modern technologies on human behavior* (pp. 149–167). New York.

20 Heino et al., Relationshopping; Lenton et al., Shopping for a mate; Lenton et al., Who is in your shopping cart?.

21 Lenton et al., Shopping for a mate; Lenton et al., Who is in your shopping cart?.

22 Pizzato, L., Rej, T., Akehurst, J., Koprinska, I., Yacef, K., & Kay, J. (2013). Recommending people to people: The nature of reciprocal recommenders with a case study in online dating. *User Modeling and User-Adapted Interaction*, *23*(5), 447-488. doi:10.1007/s11257-012-9125-0; Pizzato, L., Rej, T., Chung, T., Koprinska, I., & Kay, J. (2010). RECON: A reciprocal recommender for online dating. *Proceedings of the Fourth ACM Conference on Recommender Systems*, 207-214. doi:10.1145/1864708.1864747; Xia, P., Liu, B., Sun, Y., & Chen, C. (2015). Reciprocal recommendation system for online dating. *Proceedings of the 2015 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining 2015*, 234-241. doi:10.1145/2808797.280928.

23 Fuller, M. A., Serva, M. A., & Benamati, J. "Skip." (2007). Seeing is believing: The transitory influence of reputation information on e-commerce trust and decision making. *Decision Sciences*, *38*(4), 675-699. doi:10.1111/j.1540-5915.2007.00174.x.

24 Bolton, G., Greiner, B., & Ockenfels, A. (2013). Engineering trust: Reciprocity in the production of reputation information. *Management Science*, *59*(2), 265-285. doi:10.1287/mnsc.1120.1609.

if a number of people recommend a product or confirm the available information then it is credible.[25] The trustworthiness generating mechanism of reputation information has already been adopted by online markets such as eBay, Amazon, Booking.com, and many others,[26] and has recently been implemented by online dating applications such as *Do I Date* and *Once*. Applying the concept of reputation information of Fuller and colleagues [27] in the context of online dating, we define reputation information as publicly held information provided via a trust-building technology. In online dating, third-party reputation information such as a comment made by friends could not only increase the online dater's trustworthiness but could also serve as a warrant that the online dater is who s/he claims to be: a trustworthy person.

Trust, Trustworthiness and Reputation Information

The notion of trust is an important factor in determining if someone should interact with another person in a specific context or not.[28] In our context, trust is manifested in the willingness of an online dater (i.e., the trustor) to be vulnerable to the actions of other potential online dating partners (i.e., the trustee). According to Toma,[29] the presence of risk and vulnerability are a prerequisite for trust when the other party's motives are unknown and betrayal is possible. Trust can be established instantaneously under the right circumstances, and even in high risk environments that lack institutional safeguards.[30] Due to the limited (nonverbal) cues in online dating, these settings can be seen as risk environments where online daters might encounter deception in areas such as age, physical appearance, job, income, and relationship status.[31]

The term trustworthiness is associated with trust yet is also a concept on its own. In this paper we apply the definition of Toma and define trustworthiness as 'a characteristic of the trustee that indicates he or she is worthy of trust'. [32] Interestingly, people don't need social interactions to make judgments regarding someone's trustworthiness.[33] Regarding online

25   Metzger, M. J., & Flanagin, A. J. (2013). Credibility and trust of information in online environments: The use of cognitive heuristics. *Journal of Pragmatics*, *59, Part B*, 210-220. doi:10.1016/j. pragma.2013.07.012.

26   Bolton et al., Engineering trust.

27   Fuller et al., Seeing is believing.

28   Stanier, J., Naicken, S., Basu, A., Li, J., & Wakeman, I. (2010). Can we use trust in online dating? *Journal of Wireless Mobile Networks, Ubiquitous Computing, and Dependable Applications*, *1*(4), 50-61.

29   Toma, C. L. (2010). Perceptions of trustworthiness online. *Proceedings of the 2010 ACM conference on Computer supported cooperative work - CSCW '10*. doi:10.1145/1718918.1718923.

30   Meyerson, D., Weick, K. E., & Kramer, R. M. (1996). Swift trust and temporary groups. In R. M. Kramer & T. Tyler (Eds.), *Swift trust and temporary groups* (pp. 166-195). Thousand Oaks, CA: Sage; Fuller et al., Seeing is believing.

31   Guadagno, R. E., Okdie, B. M., & Kruse, S. A. (2012). Dating deception: Gender, online dating, and exaggerated self-presentation. *Computers in Human Behavior*, *28*(2), 642-647. doi:10.1016/j. chb.2011.11.010; Hancock, J. T., & Toma, C. L. (2009). Putting your best face forward: The accuracy of online dating photographs. *Journal of Communication*, *59*(2), 367-386. doi:10.1111/j.1460 2466.2009.01420.x; Toma, C. L., & Hancock, J. T. (2012). What lies beneath: The linguistic traces of deception in online dating profiles. *Journal of Communication*, *62*(1), 78-97. doi:10.1111/j.1460-2466.2011.01619.x.

32   Toma, Perceptions of trustworthiness online, p. 14.

33   Toma, Perceptions of trustworthiness online.

dating, this implies that people can make judgments of other online daters' trustworthiness merely by analyzing the information on their profile.

To boost the trustworthiness of a potential partner, reputation information may thus be of great importance. Past research showed that a good reputation could decrease consumer concerns regarding a purchase and could encourage online purchasing.[34] In the context of online dating, adding reputation information can inform online daters who to trust or interact with and who to avoid. The first can be achieved by adding positive information to an online dating profile, the latter by adding negative information. It seems feasible that online daters will ask members of their social network to verify their reputation by means of positive reputation information. Adding strictly negative information to a profile would only downsize one's options and would be less likely to be used as a strategy by online daters themselves. Moreover, it could be possible that extremely negative statements could be perceived as a form of aggression and would be in contravention with the terms of use of the online dating platforms. Therefore, we opt to work solely with positive information reputation. Accordingly, our first hypothesis is:

H_1: Adding positive reputation information to an online dating profile will positively impact the perceived trustworthiness of the online dating candidate, compared to a profile without reputation information.

In online shopping environments, the availability of reputation information should eventually lead to online customers buying the product, or in the case of online dating should eventually lead to a face-to-face meeting with the online dater in an offline setting. Based on the rationale that reputation information would influence trust,[35] which is deemed crucial in initial interactions,[36] we also hypothesize:

H_2: Adding positive reputation information to an online dating profile will positively impact the willingness to go out on a date with the online dating candidate, compared to a profile without reputation information.

Method

This study was approved by the Ethics Committee of the authors' university. The participants were fully informed about the general scope of the study and gave their informed consent to participate. No compensation was given for participation.

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34   Fuller et al., Seeing is believing.
35   Bolton et al., Engineering trust.
36   Donn & Sherman, Attitudes and practices regarding the formation of romantic relationships on the Internet; Larzelere, R. E., & Huston, T. L. (1980). The dyadic trust scale: Toward understanding interpersonal trust in close relationships. *Journal of Marriage and Family*, *42*(3), 595-604. doi:10.2307/351903.

PRETEST

Four profile pictures were selected from the validated Radboud Faces Database (RaFD)[37] to create mock online dating profiles that were presented as part of a professional dating website. A total sample of 86 participants took part in the survey and were recruited via MTurk. After deleting the respondents who partook multiple times ($n = 16$) and those who did not complete the survey ($n = 10$), a final sample of 60 participants (46.7% males) aged 18 to 27 ($M_{age} = 23.30$, $SD = 2.46$) remained. All the participants in this pretest were merely shown a picture of the opposite sex model and asked to rate them for trustworthiness, attractiveness, and willingness to go out on a date on single-item scales ranging from 0 (*not at all*) to 10 (*very much*). Paired samples *t*-tests were used to contrast both male and both female candidates on perceived trustworthiness and attractiveness. The results show that male models do not score significantly different on perceived trustworthiness ($M_{male1} = 6.60$, $SD = 1.64$; $M_{male2} = 6.13$, $SD = 1.72$; $t(31) = 2.00$, $p = .06$), attractiveness ($M_{male1} = 4.75$, $SD = 2.06$; $M_{male2} = 4.35$, $SD = 2.20$; $t(31) = 1.15$, $p = .26$), and willingness to go out on a date with them ($M_{male1} = 5.31$, $SD = 2.22$; $M_{male2} = 4.68$, $SD = 2.30$; $t(31) = 1.57$, $p = .13$). Female models did not score significantly different either on perceived trustworthiness ($M_{female1} = 6.42$, $SD = 1.45$; $M_{female2} = 6.64$, $SD = 1.63$; $t(27) = -.82$, $p = .42$), attractiveness ($M_{female1} = 5.01$, $SD = 2.00$; $M_{female2} = 4.76$, $SD = 1.98$; $t(27) = .81$, $p = .43$), and willingness to go out on a date with them ($M_{female1} = 5.18$, $SD = 2.05$; $M_{female2} = 5.55$, $SD = 1.76$; $t(27) = -1.01$, $p = .32$).

SAMPLE AND PROCEDURE

Sample. A total of 385 participants who were recruited for this study through MTurk completed the survey. Firstly, we deleted all respondents who participated in the survey more than once (i.e., when an IP address appeared more than once) ($n = 11$). Next, as this study concentrates on (hypothetical) potential romantic partners, we excluded participants who were involved in a romantic relationship ($n = 167$). All single participants indicated that they are attracted to the opposite sex. Thus, our final sample consisted of $N = 207$ single heterosexual participants of whom 101 were males and 106 females. A majority (66.2%) had a Belgian nationality. Other countries of origin included the Netherlands (25.6%) and Germany (2.9%). Most (64.3%) had already obtained a higher education (i.e., vocational or university) degree and the majority (79.2%) indicated they were (middle school or graduate) students.

Procedure. After pretesting the materials, a 2 (male vs. female) x 2 (positive reputation information vs. no reputation information) online experiment was conducted, where these pictures were randomly assigned to a condition. Male 1 and female 1 were assigned to the control condition (i.e., Amber and David), whilst male 2 and female 2 were assigned to the experimental condition (i.e., Amy and Dave). This study was conducted amongst a different sample compared to the pretest sample to examine the influence of positive reputation

37 Langner, O., Dotsch, R., Bijlstra, G., Wigboldus, D. H. J., Hawk, S. T., & Van Knippenberg, A. (2010). Presentation and validation of the Radbound Faces Database. *Cognition and Emotion*, *24*(8), 1377-1388. doi:10.1080/02699930903485076.

information as trust evoking information. Participants were shown two online dating profiles of the opposite sex. One profile only showed a website screenshot with a picture, name, and relationship status (single) of the candidate. The space with 'what friends say about [name]' was left empty. The other profile showed the same information, with the space 'what friends say about [name]' filled with 'I've known him/her for years. He/She is great! A true friend'. For each of the two profiles shown, participants had to rate the trustworthiness of the person in the picture and the willingness to date this person.

MEASURES

Perceived Trustworthiness. An adaptation of the Dyadic Trust Scale[38] was used to measure the trustworthiness of a potential date. Participants had to answer each question on a 7-point Likert Scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). High Cronbach Alpha scores were reported for all four profiles ($\alpha_{female\_control}$ = .85, $\alpha_{female\_rep.inf}$ = .86, $\alpha_{male\_control}$ = .82, $\alpha_{male\_rep.inf.}$ = .80), and the general perceived trustworthiness scores were computed as total scores per person ranging from 8 (minimum) tot 65 (maximum).

Willingness to Date. Participants had to indicate on a *7*-point Likert style scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*) their willingness to go on a date with the person in the online dating profile, by answering the question 'I am very interested in going on a date with this person'.

General Trust. As a control variable ,the overall level of trust in others was measured by Yamagishi's[39]) six-item General Trust Scale (α = .80). Summing up all items, a General Trust total was created ranging from 6 (minimum) to 42 (maximum) (M_{trust} = 25.80, SD = 5.79).

Results

Before conducting the analyses, an independent *t*-test was constructed to analyze whether the design was unbalanced in terms of cell-sizes and a correction must be applied. The general trustworthiness levels for the control (no reputation information) and experimental condition (reputation information) were implemented as test variables, and gender as a grouping variable. The Levene's test for equality of variances was not significant for the control condition (p = .11), nor for the experimental condition (p = .09). This means that the standard deviations between men and women in both conditions are not significantly different.

38   Larzelere & Huston, The dyadic trust scale.
39   Yamagishi, T., & Yamagishi, M. (1994). Trust and commitment in the United States and Japan. *Motivation and Emotion, 18*(2), 129–166. doi:10.1007/BF02249397.

H1: THE EFFECT OF THIRD-PARTY REPUTATION INFORMATION ON PER-CEIVED TRUSTWORTHINESS

To test the first research hypothesis, which predicted that adding positive reputation information to an online dating profile would positively impact the perceived trustworthiness of the online dating target, a repeated measures ANCOVA was used. Perceived trustworthiness was implemented as a within-subject dependent, because each participant saw both online dating profiles of the opposite sex. To control for sex differences and general trust, gender was added as a between-subject fixed factor and the scores of the General Trust Scale were added as a between-subject covariate. Mauchly's test of sphericity was not violated, therefore the degrees of freedom were not corrected. The results show a significant main effect of the reputation information on perceived trustworthiness, $F_{(1,203)} = 5.31$, $p < .05$, $\eta_p^2 = .16$, with a higher score for the perceived trustworthiness of the profile with the reputation information, $M_{rep.inf.} = 37.02$, SD = 6.70, as compared to the profile without the reputation information, $M_{control} = 33.77$, SD = 6.70. There was no significant interaction with gender, $F_{(1,203)} = 0.21$, $p = .64$, $\eta_p^2 = .03$. There was no significant difference between men and women rating the profile without reputation information ($M_{female\_control} = 33.65$, SD = 7.14; $M_{male\_control} = 33.89$, SD = 6.27), nor one between men and women rating the profile with reputation information ($M_{female\_rep.inf.} = 37.38$, SD = 7.27; $M_{male\_rep.inf.} = 36.69$, SD = 6.11) (see Table 1). There was also no significant interaction with general trust, $F_{(1,203)} = .97$, $p = .33$, $\eta_p^2 = .07$. Finally, the three-way interaction between general trust, gender and reputation information was also not significant, $F_{(1,203)} = .07$, $p = .80$, $\eta_p^2 = .02$. In sum, adding positive reputation information to an online dating profile significantly increases the perceived trustworthiness of the candidate (confirming hypothesis 1), regardless of any gender differences and levels of general trust in others from those who rate the profiles.

Participants	Profile without R.I.	Profile with R.I.
Male participants (N = 101)	33.65 (7.14)	37.38 (7.27)
Female participants (N = 106)	33.89 (6.27)	36.69 (6.11)
Total (N = 207)	33.77 (6.70)	37.02 (6.70)

Table 1:Means and standard deviations for the trustworthiness scores of the profiles with and without positive reputation information (N = 207). Note. R.I. stands for reputation information.

H2: THE EFFECT OF THIRD-PARTY REPUTATION INFORMATION ON THE WILLINGNESS TO GO OUT ON A DATE

To test the second research hypothesis which predicted that adding positive reputation information to an online dating profile would positively impact the willingness to go out on a date with the online dating target, a repeated measures ANCOVA was used with the willingness to date as within-subject dependent. To control for sex differences and levels of general trust of all participants, again, sex was added as a between-subject fixed factor and the scores of the General Trust Scale as a between-subject covariate. The model contained the main effect of the reputation tag on willingness to date, both two-way interactions (with

gender and general trust) and the three-way interaction between general trust, gender and reputation information. Mauchly's test of sphericity was not violated, therefore the degrees of freedom were not corrected. Results show no significant main effect of willingness to date, $F_{(1,203)} = .411$, $p = .52$, $\eta_p^2 = .05$, no significant interaction with sex, $F_{(1,203)} = 2.02$, $p = .16$, $\eta_p^2 = .10$, or general trust, $F_{(1,203)} = 1.44$, $p = .23$, $\eta_p^2 = .08$. Also the three-way interaction was not significant, $F_{(1,203)} = 1.32$, $p = .25$, $\eta_p^2 = .08$. In sum, adding positive reputation information to an online dating profile has no effect on the willingness to date the candidates (rejecting the second hypothesis), regardless of any sex differences and general levels of trust in others. Thus, the results show that the effect of adding positive reputation information to an online dating profile on the willingness to go out on a date is not greater among female participants than it is among male participants.

Discussion

The study presented in this chapter shows that adding positive third-party reputation information to an online dating profile increases the perceived trustworthiness of the candidate, thus confirming the first research hypothesis. Given the seemingly unlimited amount of available potential online dating partners,[40] and the scarcity of cues offered and used to scan for potential partners online,[41] a simple strategy of merely adding a short piece of third-party information may be helpful to solve problems of perceived trustworthiness in the online dating context. This tactic has already been applied and proven to be useful not only in online shopping environments,[42] but also in offline dating. In offline dating scenes, third-party individuals such as (mutual) friends might provide information that confirms the online dater's identity.[43]

However, when we look at the results for participants' willingness to go on a date with the presented candidates, adding reputation information does not increase the likelihood that participants will go out on a date with the online dating candidate, hereby rejecting the second research hypothesis. Perhaps, the scores for all participants' willingness to go out on a date with the presented candidates were too low to begin with since they did not seem attractive enough and no factor could have changed the situation dramatically. Another possibility is that other factors aside from reputation information could influence the participants' willingness to go on a real date with an online partner. This might be the shape of the profile picture, the name (or username), and personal description.[44] The last was not added to the mock profiles in the current study, which may explain the lower scores for participants' willingness to go out on a date. Future research could consider including personal descriptions in the online dating profiles, and perhaps investigate how different narratives could have a potential impact.

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40 Fiore & Donath, Online personals; Lenton et al., Shopping for a mate.
41 Khan, K. S., & Chaudhry, S. (2015). An evidence-based approach to an ancient pursuit: Systematic review on converting online contact into a first date. *Evidence Based Medicine, 20*(2), 48-56. doi:10.1136/ebmed-2014-110101.
42 Bolton et al., Engineering trust.
43 Gibbs et al., First comes love, then comes Google.
44 Khan & Chaudhry, An evidence-based approach to an ancient pursuit.

PRACTICAL IMPLICATIONS: IMPLEMENTATION IN ACTUAL ONLINE DATING ENVIRONMENTS

Based on the current findings, some practical implications can be formulated because the practicalities of this reputation information feature might pose some challenges. Firstly, the reputation system must be built in such a manner to ensure that the feature will not be abused by deceivers who would provide the information themselves, which would imply extra monitoring efforts from the online dating hosts. To prevent online daters from expanding their positive reputation information, online dating platforms should disable the possibility of online daters selecting or deleting certain reputation information fragments. However, online dating platforms should also make sure online daters would not potentially need to watch from the sidelines as their profile are slandered by previous partners. Recent articles about this new feature in certain dating apps such as *Once* do mainly focus on these negative comments and online dating experts stress that good dates might not get good reviews to decrease the competition of other suitors.[45] A main difference between the procedure used in our study and the *Once* dating application is that we used information of friends whereas *Once* works with information gathered from past dates where negative information is expected to be more prevalent.

Accordingly, a possible solution is to add the reputation information source. This solution is already implemented in online shopping environments such as Booking.com, where reputation information is accompanied by a notification of the origin of the information (e.g., 'young couple travelling', 'businessman', 'family with children', …). It would be interesting to further investigate the effect of reputation information on perceived trustworthiness whilst manipulating the reputation information source, such as information added by the profile owner or by people other than the owner.

LIMITATIONS

Notwithstanding its contributions, the present study is subject to certain limitations. First, only the effect of adding positive reputation information to an online dating profile was measured. Second, no distinction was made in the expectations of the relational outcomes of the participants. Willingness to go out on a date was measured without making any distinctions between short-term and long-term affair intentions. Of course, it could be argued that in reality online daters may not know the answer to this question in the early stages of browsing profiles, and that these issues may only emerge later in the evaluation process.[46] Then, again, some people do use online dating with a specific recreational desire to pursue short-term, casual

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45   Dillen, N. (2018, June 6). "Hij nam zijn moeder mee naar ons afspraakje": Vrouwen mogen dates schaamteloos recenseren in deze app. *Het Laatste Nieuws*. Retrieved from https://www.hln.be/nina/-hij-nam-zijn-moeder-mee-naar-ons-afspraakje-vrouwen-mogen-dates-schaamteloos-recenseren-in-deze-app~ae1342f1/#comments; Matthys, H. (2018, June 7). Datingapp Once laat vrouwen een recensie schrijven na hun date: 'Hij ziet er in het echt niet zo goed uit als op zijn profielfoto.' *Flair*. Retrieved from https://www.flair.be/nl/lifestyle/dating-app-once-laat-vrouwen-hun-date/.

46   Khan & Chaudhry, An evidence-based approach to an ancient pursuit.

relations,[47] and these may have been part of the sample of this study. We, therefore, suggest that future studies would control for participants' desire about the length of the expected affair.

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47 Hallam, L., De Backer, C. J. S., Fisher, M. L., & Walrave, M. (2018). Are sex differences in mating strategies overrated? Sociosexual orientation as a dominant predictor in online dating strategies. *Evolutionary Psychological Science*, *4*(4), 456-465. doi:10.1007/s40806-018-0150-z; Peter, J., & Valkenburg, P. M. (2007). Who looks for casual dates on the Internet? A test of the compensation and the recreation hypothesis. *New Media & Society*, *9*(3), 455-474. doi:10.1177/1461444807076975.

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11: FROM SWIPING TO GHOSTING: CONCEPTUALIZING REJECTION IN MOBILE DATING

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Internet-enabled dating has reshaped the initial formation processes of romantic relationships in the digital age, and based on their widespread popularity, reflect the contemporary dating culture. Since its inception, the use of online dating sites has evolved from a marginal social practice into a pervasive avenue for finding new romantic or sexual partners.[1] As internet-enabled mobile technologies (i.e., smartphones) have advanced, online dating has transferred onto mobile platforms. Recent data have shown, 15% of American adults have used online or mobile dating in the pursuit of romantic connection, and the use of mobile dating apps has tripled among adults since 2013, including a fourfold increase among 18 to 24-year-olds.[2] According to Schrock, mobile media has become the primary avenue for online connection, altering 'the form and function of communication'.[3] For instance, past research recognizes the way mobile dating has decreased the value individuals ascribe to new romantic relationships.[4]

Due to their popularity, extensive research has investigated the impact of mobile dating on relational initiation and development, focusing on how these applications influence impression formation, uncertainty reduction, self-disclosure, and self-presentation.[5] However, given the

1   Gibbs. J. L., Ellison, N. B., & Lai, C. (2011). First comes love, then comes Google: An investigation of uncertainty reduction strategies and self-disclosure in online dating. *Communication Research*, *38*(1), 70-100. doi:10.1177/0093650210377091.

2   Smith, A. (2016). 15% of American adults have used online dating sites or mobile dating apps. Retrieved from http://www.pewinternet.org/2016/02/11/15-percent-of-american-adults-have-used-online-dating-sites-or-mobile-dating-apps/.

3   Schrock, A. R. (2015). Communicative affordances of mobile media: Portability, availability, locatability, and multimediality. *International Journal of Communication*, 9, 1229-1246. Retrieved from http://ijoc.org/index.php/ijoc/article/view/3288, p. 1230.

4   Hess, A., & Flores, C. (2018). Simply more than swiping left: A critical analysis of toxic masculine performances on Tinder nightmares. *New Media & Society*, *20*(3), 1085-1102. doi:10.1177/1461444816681540.

5   Birnholtz, J., Fitzpatrick, C., Handel, M., & Brubaker, J. R. (2014). Identity, identification and identifiability: The language of self-presentation on a location-based mobile dating app. In Proceedings of the 16th International Conference on Human-Computer Interaction with Mobile Devices & Services — Mobile HCI '14 (pp. 3-12). New York, NY: ACM. doi:10.1145/2628363.2628406; Ranzini, G., & Lutz, C. (2016). Love at first swipe? Explaining Tinder self-presentation and motives. *Mobile Media & Communication*, *5*(1), 80-101. doi:10.1177/2050157916664559; Sumter, S. R., Vandenbosch, L., & Ligtenberg, L. (2017). Love me Tinder: Untangling emerging adults' motivations for using the dating application Tinder. *Telematics and Informatics*, 34(1), 67-78. doi:10.1016/j.tele.2016.04.009; Toch, E., & Levi, I. (2013). Locality and privacy in people-nearby applications. In Proceedings of the 2014 ACM International Joint Conference on Pervasive and Ubiquitous Computing — UbiComp '13 (pp. 539-548). New York, NY: ACM. doi:10.1145/2493432.2493485; Van De Wiele, C., & Tong, S. T. (2014). Breaking boundaries: The uses & gratifications of Grindr. Proceedings of the 2014 ACM International Joint Conference on Pervasive and Ubiquitous Computing — UbiComp '14 (pp. 619-630). New York, NY: ACM. doi:10.1145/2632048.2636070.

ability for mobile dating apps to connect users with a larger pool of potential romantic and sexual partners, the likelihood of experiencing rejection will logically increase as well. Despite this consideration, no current research has examined these unanticipated negative outcomes of mobile dating application use, which potentially account for a significant amount of the overall user experience.

To address this gap in the literature, this study aims to portray how rejection occurs on mobile dating apps, establish an inventory of themes used to describe these events, and determine how experiences of rejection influence continued mobile dating apps use. Given the exploratory nature of this study, it does not align with an existing theoretical framework, and will, therefore, rely on user-generated data. Finally, the implications of these findings will be considered for future scholarship concerning mobile dating and romantic rejection.

Literature Review

MOBILE DATING APPS

Unlike traditional online dating sites (e.g., eHarmony, Match.com, etc.), which allow users to develop in-depth profiles, mobile dating apps (e.g., Tinder, Bumble, Grindr, etc.) are comparatively limited for self-presentation.[6] Particularly, mobile dating app profiles consist of multiple photos and limited personal information (e.g., age, name), which overtly 'emphasizes the importance of physical appearance and mutual attraction'.[7] Whereas online dating sites algorithmically match users based on shared personality traits and preferences, most of the mobile dating apps feature a landing page, displaying a catalog of nearby users, arranged by photo, name, and distance, which enhances selectivity.[8]

Although online and mobile dating were both designed to connect unaffiliated users for romantic and/or sexual relationships, they differ in the immediacy each platform affords. Specifically, mobile dating apps utilize location-based information to connect users based on proximity, which facilitates immediate, offline interaction[9]. Previous research has described this immediacy as a 'hybrid ecology', which seamlessly transitions an interaction between 'physical and digital modalities'.[10] For this reason, the existing literature has referred to mobile dating apps as people-nearby applications[11] or location-based real-time dating apps.[12] However, the term mobile dating application (or app) is used herein to encompass all forms of mobile dating, as each application utilizes similar GPS-enabled technology.

6   Birnholtz et al., Identity, identification and identifiability.
7   Timmermans, E., & Caluwé, E. D. (2017). Development and validation of the Tinder motives scale (TMS). *Computers in Human Behavior*, *70*, 341-350. doi:10.1016/j.chb.2017.01.028.
8   Toch & Levi, Locality and privacy in people-nearby applications.
9   Van De Wiele & Tong, Breaking boundaries.
10   Toch & Levi, Locality and privacy in people-nearby applications, p. 540.
11   Toch & Levi, Locality and privacy in people-nearby applications.
12   Birnholtz et al., Identity, identification and identifiability.

In recent years, the popularity and number of mobile dating apps available have grown considerably. As one of the most prevalent mobile dating apps, Tinder proclaims to have facilitated over 20 billion matches worldwide, including 26 million new matches per day and 1.5 million dates per week.[13] Other applications are marketed toward specific populations, such as Grindr, an all-male mobile dating app, which boasts a staggering 3.8 million daily average users worldwide.[14]

Previous studies have examined how the hybridity of these applications provide users greater control over privacy, self-disclosure, and self-presentation.[15] Similar to past research concerning online dating sites, Ranzini's and Lutz's investigation revealed that self-esteem and personal motives for accessing Tinder (e.g., sex, romantic partnership, entertainment, etc.) determined the authenticity of users' self-presentation.[16] Yet, although numerous mobile dating apps exist, much of the current literature has focused on Grindr and Tinder, thereby demonstrating the need to include other applications within this field of research.

Given the distinct interplay between online and offline interaction, mobile dating apps present a unique modality for relational initiation, markedly different from traditional online dating sites. As Birnholtz and colleagues explain, 'these apps are used to locate and interact with nearby strangers who are interested in meeting, often soon, for a date or sexual encounter.'[17] Consequently, mobile dating apps have been referred to as 'sex-apps' and are commonly associated with an emergent hook-up culture that devalues long-term commitment.[18] Furthermore, due to the implicit immediacy in translating online interactions to offline locales, the perceived risks in meeting potential romantic partners are heightened.[19]

Beyond this, research focusing on the disadvantages or unanticipated negative outcomes of mobile dating is largely absent from the communication literature despite a robust body of empirical research regarding patterned rejection behaviors within face-to-face interaction.

ROMANTIC REJECTION

Of the negative, often unanticipated, outcomes associated with initial relationship formation, rejection is commonly regarded as the most destructive.[20] Moreover, the subsequent effects

13   Tinder. (2018). About Tinder. Retrieved December 19, 2018, from https://www.gotinder.com/press.
14   Grindr. (2018). About Grindr. Retrieved December 19, 2018, from https://www.grindr.com/about/.
15   Birnholtz et al., Identity, identification and identifiability; Ranzini & Lutz, Love at first swipe?; Toch & Levi,
     Locality and privacy in people-nearby applications; Van De Wiele & Tong, Breaking boundaries.
16   Ranzini & Lutz, Love at first swipe?.
17   Birnholtz et al., Identity, identification and identifiability, p. 3.
18   Hess & Flores, Simply more than swiping left; Quiroz, P. A. (2013). From finding the perfect
     love online to satellite dating and 'loving-the-one-you're near': A look at Grindr, Skout, Plenty
     of Fish, Meet Moi, Zoosk, and assisted serendipity. *Humanity & Society*, *37*(2), 181-185.
     doi:10.1177/0160597613481727; Ranzini & Lutz, Love at first swipe?; Sumter et al., Love me Tinder.
19   Birnholtz et al., Identity, identification and identifiability; Van De Wiele & Tong, Breaking boundaries.
20   Knapp, M. L. (1978). *Social intercourse: From greeting to goodbye.* Boston, MA: Allyn & Bacon; Leary,
     M. R. (2015). Emotional responses to interpersonal rejection. *Dialogues in Clinical Neuroscience*, *17*(4),

of rejection are myriad, including 'hurt feelings, jealousy, loneliness, shame, guilt, social anxiety, and embarrassment'.[21] For this reason, rejection has received considerable attention in the existing literature for its detrimental effects on romantic relationships,[22] peer-group acceptance,[23] and childhood socialization.[24]

Previous research conceptualizes rejection as a dispositional personality trait, referred to as rejection sensitivity, whereby individuals 'anxiously expect, readily perceive, and overreact to rejection'.[25] More recently, Blackhart, Fitzpatrick, and Williamson applied the rejection sensitivity model to online dating in order to determine the dispositional factors that predict online dating site use.[26] Particularly, the authors found that rejection-sensitive individuals are more likely to use online dating sites than those with low sensitivity to rejection. This finding demonstrates the contextual affordances of online dating sites that are unavailable within face-to-face interaction, including selective self-presentation and disclosure and increased control over the communication process. Accordingly, the authors suggest 'rejection from others on online dating sites may be less salient than face-to-face rejection from a potential romantic partner.'[27] To this extent, rejection experienced offline is more detrimental than rejection experienced online. The reason might be the relative easiness of delivering rejection messages in mediated environments.

Earlier studies have made similar claims, despite a lack of empirical evidence. In their investigation of partner preferences in online dating, Hitsch, Hortaçsu, and Ariely looked at the strategic behaviors of online dating sites users, anticipating that the costs of rejection – the emotional weight or valence attached to experiences of rejection – are less important online than offline.[28] Specifically, the researchers argued that 'the fear of rejection should be mitigated by the anonymity provided by the dating site';[29] however, their findings were

435-441. doi:10.1093/acprof:oso/9780195130157.001.0001.

21   Leary, Emotional responses to interpersonal rejection, p. 440.
22   Downey, G., & Feldman, S. (1996). Implications of rejection sensitivity for intimate relationships. *Journal of Personality and Social Psychology*, *70*(6), 1327-1343. doi:10.1037/0022-3514.70.6.1327; Downey, G., Freitas, A., Michaelis, B., & Khouri, H. (1998). The self-fulfilling prophecy in close relationships: Rejection sensitivity and rejection by romantic partners. *Journal of Personality and Social Psychology*, *75*(2), 545-560. doi:10.1037/0022-3514.75.2.545.
23   London, B., Downey, G., Bonica, C., & Paltin, I. (2007). Social causes and consequences of rejection sensitivity. *Journal of Research on Adolescence*, *17*(3), 481-506. doi:10.1111/j.1532-7795.2007.00531.x.
24   Downey, G., Lebolt, A., Rincon, C., & Freitas, A. (1998). Rejection sensitivity and children's interpersonal difficulties. *Child Development*, *69*(4), 1074-1091. doi:10.1111/j.14678624.1998.tb06161.
25   Downey & Feldman, Implications, p. 1341.
26   Blackhart, G., Fitzpatrick, J., & Williamson, J. (2014). Dispositional factors predicting use of online dating sites and behaviors related to online dating. *Computers in Human Behavior*, *33*, 113-118. doi:10.1016/j.chb.2014.01.022.
27   Blackhart et al., Dispositional factors predicting use of online dating sites and behaviors related to online dating, p. 116.
28   Hitsch, G. J., Hortaçsu, A., & Ariely, D. (2010). Matching and sorting in online dating. *American Economic Review*, *100*(1), 130-163. doi:10.1257/aer.100.1.130.
29   Hitsch et al., Matching and sorting in online dating, p. 141.

unable to support this claim.

Other research concerning rejection within online environments has examined the specific tactics users employ when declining a prospective romantic partner through online dating sites.[30] According to Tong and Walther,[31] online dating sites provide three primary methods for rejecting another user: remaining unresponsive, generating automatic rejection response, or tailoring rejection messages. Using an experimental procedure, the researchers observed how politeness strategies changed in relation to variables of social distance, the expectation of future contact, and the communication platform and found that online dating sites (in this case Match.com) warrant fewer politeness strategies when rejecting an unknown user, thereby demonstrating the impersonality of online dating. While these findings illustrate the contextual affordances of online dating for the rejecter, they fail to determine the outcomes associated with being rejected in this context.

Despite the considerable attention, rejection has received in previous literature, no existing research has determined if the immediacy of mobile dating alters how users experience and respond to rejection. Considering the distinct contextual changes from traditional online dating sites to mobile dating apps, the current research seeks to identify how these apps have transformed the nature of romantic rejection as a negative byproduct of the initial relationship process. In order to address this gap in the existing literature, the following research questions are advanced:

RQ[1]: How does romantic rejection occur within mobile dating apps?

RQ[2]: What themes are used to describe romantic rejection within mobile dating applications?

RQ[3]: How do experiences of rejection influence individuals' use of mobile dating applications?

Method

Sample

Participants (N = 68) included current or former mobile dating apps users, ages 18 and older (M = 27.04, SD = 6.12). Most participants identified as White/Caucasian (n = 58), followed by Black/African American (n = 3), 'other' (n = 3), Asian (n = 2), and Hispanic/Latinx (n = 2). Forty-three respondents were female, followed by 24 male, and one participant did not specify. Finally, 46 respondents identified as heterosexual, 12 identified as bisexual, nine identified as homosexual, and one respondent listed their sexual orientation as 'other'. When asked which app respondents to have used, the majority of participants used Tinder (n = 58), followed by OkCupid (n = 36), Bumble (n = 24), CoffeeMeetsBagel (n = 9), Grindr (n = 8), and Happn

30   Tong, S. T., & Walther, J. B. (2010). Just say 'no thanks': Romantic rejection in computer-mediated communication. *Journal of Social and Personal Relationships*, *28*(4), 488-506. doi:10.1177/0265407510384895.

31   Tong & Walther, Just say 'no thanks'.

(n = 5). Another 14 respondents indicated using other mobile dating apps, which included: Match, Hinge, Plenty of Fish, Scruff, Zoosk, JDate, JSwipe, and Yellow.

Participants were recruited through various social network sites, such as Facebook, Twitter, and Reddit, via snowball sampling whereby participants were asked to share the questionnaire link with other mobile dating apps users who matched the sampling criteria. After participants indicated their informed consent, they accessed an online questionnaire and responded to the items described below.

MEASURES AND ANALYSIS

The online questionnaire included five open-ended questions, adapted from previous qualitative and mixed-method questionnaires used to develop an authentic inventory of themes (see Appendix A[32]). In addition, participants were asked how frequently they experience rejection and how frequently they reject other users through mobile dating apps. These items were measured using 5-point Likert scales ranging from 1 (always) to 5 (never). Except for one respondent who indicated only initiating rejection (i.e., rejecting other users), all participants indicated experiencing rejection either sometimes (n = 34) or half-the-time or more (n = 33), therefore demonstrating respondents' familiarity with the subject.

For the analysis of open-ended questions, recurring themes were identified based on importance and frequency, following the traditional procedural methodology of grounded theory. According to Starks and Trinidad,[33] grounded theory is used to 'develop an explanatory theory of basic social processes, studied in the environments in which they take place'.[34] Like discourse analysis and phenomenology, grounded theory is used to identify underlying patterns or themes within qualitative data. Methodologically, this process involves an inductive thematic analysis approach, whereby data are coded without attempting to fit them into a pre-existing coding frame.[35]

To enhance the analysis, the semantic networks were also generated from the open-ended responses and interpreted by the researchers. In past studies of textual data, similar methods were used to 'identify salient words and concepts in order to extract underlying meanings and frames from the structure of concept networks'.[36] Using automated cluster analysis,

32 Joinson, A. N. (2008). Looking at, looking up or keeping up with people?: Motives and use of Facebook. Proceedings of the 2008 ACM Conference on Human Factors in Computing Systems – CHI '08 (pp. 1027-1036). New York, NY: ACM. doi:10.1145/1357054.1357213; Szalay, L. B., & Deese, J. (1978). *Subjective meaning and culture: An assessment through word associations*. Hillsdale, NJ: Lawrence Erlbaum; Van De Wiele & Tong, Breaking boundaries.

33 Starks, H., & Trinidad, S. B. (2007). Choose your method: A comparison of phenomenology, discourse analysis, and grounded theory. *Qualitative Health Research*, *17*(10), 1372-1380. doi:10.1177/1049732307307031.

34 Starks & Trinidad, Choose your method, p. 1374.

35 Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77-101. doi:10.1191/1478088706qp063oa.

36 Shim, J., Park, C., & Wilding, M. (2015). Identifying policy frames through semantic network analysis: An

co-occurring words were grouped together to reveal prominent keywords and terms used to describe rejection as it occurs within mobile dating apps. Like thematic analysis, the semantic networks generated from the open-ended responses were inductively interpreted.

Prior to creating the semantic networks, open-ended responses were cleaned using R Statistical Package to remove common articles (e.g., 'the', 'is', 'are', etc.), punctuation, and other peripheral content (i.e., non-text symbols and emojis). To concatenate various forms of the same root word (e.g., 'they', 'theirs', 'them', etc.), a porter-stemming algorithm was run against the open-ended questionnaire responses in R. Finally, a string replacement function was performed to compound terms that were used in reference to the same concept (e.g., 'ghost' and 'ghosting' were replaced with 'ghosting').

Results

The respondents' reactions were coded using Braun and Clarke's six-step process for thematic analysis.[37] The authors reviewed the responses to open-ended questionnaire items and identified frequently occurring or related words and statements, which were then used to code the remaining data. For each instance, the unit of analysis was the individual statement participants provided in response to open-ended questionnaire items. Following the creation of semantic networks, the authors leveraged a similar interpretive approach for analysis, whereby measures of centrality and modularity were used to evaluate the significance of terms and word clusters.

THEMATIC ANALYSIS

Research Question 1. In order to answer this study's first research question, two open-ended statements asked participants: 'Using easy-to-understand terms, please describe how rejection occurs in mobile dating apps', and 'When you reject others within mobile dating apps, how do you do this?' Following the inductive examination of responses for both questions, six unique themes regarding how rejection occurs within mobile dating apps were identified, as seen in Table 1, which included: ghosting (34.1%), ignoring (22.7%), swiping (18.6%), rejection message (10.9%), unmatching (8.6%), and blocking (5.1%).

examination of nuclear energy policy across six countries. *Policy Sciences, 48*(1), 51-83. doi:10.1007/s11077-015-9211-3, p. 58.

37 Braun & Clarke, Using thematic analysis in psychology.

Category	Exemplar	Frequency (N=220)
Ghosting	Ghosting; People just stop replying to messages	75
Ignoring	Matching with someone, sending a message and never getting a reply	50
Swiping	Left swipe (i.e. we don't match)	41
Rejection message	Stating they're not interested; Tell them it's not going to work out	24
Unmatching	Unmatching; I unmatch them	19
Blocking	Blocking them	11

Table 1: Themes describing how rejection occurs within mobile dating apps.

Thematic analysis revealed that ghosting was the most common form of rejection experienced by mobile dating apps users. For instance, respondents described this process as 'starting [a] conversation and never hearing back' and 'meeting once and never again'. In line with LeFebvre's conceptualization,[38] we define ghosting as the act of establishing contact with another user, often through reciprocal expressions of romantic interest, and unexpectedly withdrawing from communication with that user without providing an explanation.

Similarly, respondents identified being ignored or ignoring others as another frequently experienced form of rejection in mobile dating apps. Unlike ghosting, ignoring does not include establishing a conversation or interaction with another user. As one user describes, this process includes 'matching with someone, sending a message and never getting a reply'. Other respondents identified swiping left, an embedded feature within some mobile dating apps (e.g., Tinder), as another form of rejection. While few respondents described this process beyond 'swiping left' or 'swipe no', previous literature has defined swiping left as the touchscreen enabled behavior whereby 'the user indicates not being interested in the other person'.[39]

Also identified through our analysis was the construction of a rejection message. While few respondents indicated receiving explicit messages of rejection following an initial expression of interest, multiple respondents stated they engage in this behavior when rejecting others through mobile dating apps. As one respondent stated, 'I usually respond with a friendly message saying I'm not interested. I don't think that happens a lot, but I'm looking for good karma.' The analysis also revealed user's unmatching as a common form of rejection within mobile dating, which was reflected through responses, such as 'unmatch if I don't like them anymore' and 'delete from matches'. Like swiping left, this behavior occurs as an interface component within mobile dating. Because many apps only allow users to communicate if both users have expressed interest (e.g., through swiping right or 'liking' another user's profile[40]), unmatching is a method of disconnecting from another user in order to disable

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38   LeFebvre, L. E. (2017). Phantom lovers: Ghosting as a relationship dissolution strategy in the technological age. In N. M. Punyanunt-Carter & J. S. Wrench (eds.), *The impact of social media in modern romantic relationships* (pp. 219-235). Lanham, MD: Lexington Books.

39   Timmermans & Caluwé, Development and validation of the Tinder motives scale (TMS), p. 341.

40   Timmermans & Caluwé, Development and validation of the Tinder motives scale (TMS).

communication.

Respondents also mentioned blocking other users as a form of rejection within mobile dating, as one participant explains: 'sometimes I will just block right off the bat in order to avoid confrontation.' Unlike unmatching – a platform-specific function, which disconnects two users–blocking restricts a user from contacting another user, viewing their profile, or locating them on the application.[41] To be sure, blocking may be understood as the most unyielding form of rejection reported by mobile dating apps users.

Research Question 2. Two open-ended questions were used to answer this study's second research question, including: 'What is the first thing that comes to mind when you think about being rejected on a mobile dating app?' and 'What other words would you use to describe rejection within mobile dating apps?' The analysis revealed three descriptive themes of rejection as it occurs in mobile dating. As seen in Table 2, these themes include indifference (61.2%), distress (23.3%), and superficiality (15.5%). Significantly, many respondents expressed feelings of apathy or indifference toward rejection in this context. Common responses included: 'whatever, no big deal', 'typical', and 'on to the next one'.

Category	Exemplar	Frequency (N = 116)
Indifference	It's not a big deal because the pool is so large; Never met them so who cares	71
Distress	It hurts the same as being rejected IRL; Disheartening	27
Superficiality	Am I not pretty enough?; Failure to meet superficial standards	18

Table 2: Themes describing experiences of rejection in mobile dating apps.

Respondents also detailed the unpleasant nature of rejection, despite the asynchronous nature of mobile dating. For example, one respondent explained, 'it hurts the same as being rejection IRL.' Other respondents described mobile dating app rejection as 'upsetting', 'hurtful,' and 'disheartening'. In addition, respondents emphasized the superficiality of rejection behaviors within mobile dating. This theme included responses such as 'failure to meet superficial standards', 'not attractive enough', or 'petty'.

Research Question 3. One open-ended question was used to answer this study's final research question, which asked participants: 'How do experiences of rejection influence your use of mobile dating apps?' The analysis revealed five unique themes regarding how rejection influences continued use of the apps, as seen in Table 3. These themes included: no effect (40.6%), decreased use (28.1%), termination (12.5%), decreased perception of success (12.5%), and increased use (6.3%). Interestingly, the most frequently reported response indicated that experiences of rejection do not influence continued use of mobile dating apps. As one respondent stated: 'Honestly, my experiences of rejection don't affect my use of mobile dating apps.' Other participants reported similar experiences: 'it doesn't influence me at all, I'll keep on them whether I get rejected or not', and 'it doesn't really influence me that much.'

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41   Toch & Levi, Locality and privacy in people-nearby applications.

The analysis also revealed that experiences of rejection decrease the frequency of use for some mobile dating apps users. As one participant explained: 'if there are multiple rejections close together, I might take a break from the app, but I always go back.' Other participants responded similarly, stating 'I use the app less if I experience rejection', or '[rejection] curbed my use altogether.' Separately, some respondents indicated terminating their use of mobile dating apps altogether. Unlike participants who reported using the apps less after experiencing rejection, these responses included: '…being rejected made me delete the app entirely', 'I don't use them anymore', and 'I have stopped using dating apps.' Based on these results, we suggest that the frequency of mobile dating apps use following experiences of rejection is unique to the user and that past experience of rejection may impact both the perception of the current rejection and the continued use of mobile dating apps.

Category	Exemplar	Frequency (N=64)
No effect	I continue to use the app when I want to, it doesn't bother me	26
Decreased Use	I use the app less if I experience repeated rejection	18
Termination	I don't use them anymore; Pretty much done with them	8
Decreased Perception of Success	Makes me less certain of finding a decent person; It makes me scared to contact people	8
Increased Use	I use it more frequently to try to make up for rejections	4

Table 3: Themes describing how rejection influences mobile dating app use.

Another recurring theme consisted of responses indicating that experiences of rejection decrease the perceived success associated with mobile dating app use. Specifically, this theme was captured through statements, such as 'makes me less certain of finding a decent person', 'it makes me scared to contact people I find interesting', or 'they make me feel discouraged.' Lastly, respondents reported increasing their use of mobile dating in response to having been rejected, as one respondent explained, 'I use it more frequently to try to make up for rejections.'

SEMANTIC NETWORK ANALYSIS

Research Question 1. Following the cleaning and stemming processes described earlier, a semantic network was generated using the same open-ended responses addressing this study's first research question from the previous section. Figure 1 displays the network of frequent and co-occurring terms used by mobile dating app users to describe rejection processes within those platforms, which serves to reinforce the themes identified through thematic analysis.

Figure 1: Semantic network of how rejection occurs in mobile dating.

Directionality within the network, as denoted by the weighted arrows (edges), indicates the order in which terms appeared within the text, as well as the frequency at which they appeared (e.g., 'swipe left' carried greater co-occurrence strength than 'conversation dies'). Node colors were graded according to modularity — a score used to assess and differentiate internal subgroupings within the network — such that similarly grouped terms would be similarly colored (e.g., blue colored terms are closely related, etc.).[42]

Many of the recurrent terms within the network, such as 'ghost', 'swipe', and 'ignore' aligns with the previously identified themes of ghosting, swiping, and ignoring, respectively (see Figure 1 above). For example, similar to the frequency of themes as determined via thematic coding, the term 'ghost' emerged as the most recurrent and influential node within the semantic network, with a degree centrality of 40 and betweenness centrality of 427.74.

Next, the terms 'swipe' and 'left', though appearing separately within the semantic network, each carried a degree centrality of 23 and co-occurred within the corpus of open-ended responses 48 times (i.e., as both 'swipe left' and 'left swipe'). Echoing the results from the thematic analysis, this finding demonstrates the degree to which mobile dating app users characterize the swipe logic as a rejection process.

Other terms reveal the overlap between descriptions of rejection processes among mobile

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42   Nodes (terms) within the semantic network are sized according to frequency, as determined through degree centrality.

dating app users. For instance, with the second highest betweenness centrality (99.94), the term 'message' co-occurred with terms like 'ignore', 'unmatch', and 'ghost'; and despite the distinct absence of synchronous communication among these rejection processes, as described within the open-ended responses, the implicit transmission of rejection messages as communicated through ignoring, unmatching, or ghosting emerges within the co-occurrence network. Overall, the results of the semantic network analysis capture the various processes through which rejection occurs in mobile dating, including the frequently recurring terms used to describe these processes.

Research Question 2. Like the procedure described for the first research question, the open-ended responses used to address this study's second research question were used for the construction of the co-occurrence network. Figure 2 displays the semantic network of terms used to describe experiences of rejection in mobile dating. Overwhelmingly, terms used to describe rejection appear to align with the theme of indifference, as revealed through thematic analysis. For instance, the proximity and directionality of terms 'no' 'big' 'deal' and 'who' 'cares' reflect a lack of potency concerning experiences of rejection on mobile dating platforms. Distinctively, the term 'not' emerged as the most recurrent and prominent node within the semantic network, with a degree centrality of 11 and betweenness centrality of 82. In comparing the term's co-occurrences, this suggests that many users described experiences of rejection as resultant from, or constituting, the absence of a romantic connection (e.g., 'my' 'looks' 'not' 'enough') or emotional valence (e.g., 'not' 'really' 'care').

Figure 2: Semantic network of descriptors of rejection in mobile dating.

Other terms, such as 'sad', 'sadness', and 'disheartening' align with the theme of distress; however, due to the removal of common articles and other peripheral content for the construction of the semantic network, these terms appear without any co-occurrences. As unique entries, these terms serve to capture the comparably marginal descriptions of rejection as emotionally damaging. Similarly, the theme of superficiality appeared less distinct than through thematic coding – the term 'superficial' appears without connection to other nodes within the semantic network and other co-occurrences are less explicit in capturing the theme. Taken together, the results of the semantic network analysis suggest that experiences of rejection may be less significant within the context of mobile dating than in face-to-face communication, which aligns with and affirms earlier findings in this area.[43]

Research Question 3. Figure 3 displays the semantic network of terms describing the outcomes associated with romantic rejection in mobile dating. Specifically, we look here at how these experiences influence the future use of mobile dating apps. Repeating the procedure used for the first two research questions outlined above, the open-ended responses for this study's third research question were also used to generate a final semantic network (see Figure 3).

Figure 3: Semantic network of rejection outcomes and future mobile dating apps use.

Like the previous two networks, terms contained within the third semantic network mostly aligned with the themes identified through thematic coding. For example, the largest node within this network was 'not', which, based on co-occurrence frequency (e.g., 'not' 'use';

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43   E.g., Blackhart et al., Dispositional factors.

'does' 'not') and comparatively high betweenness centrality (325.83), coincides with the theme of no effect despite the rejection.

Furthermore, the discussion of general mobile dating apps usage patterns was prominent within the third semantic network, as denoted by the recurrence of the term 'use', which carried a betweenness centrality of 142.33. While the impact rejection has on usage appears less distinct (e.g., increased or decreased use), the co-occurrence of 'use' demonstrates the larger relationship between rejection and use. In addition, the clustering of terms 'take' 'break' and 'use' 'less' align with the theme of decreased use, as detailed through thematic analysis. Overall, the results capture the varying, usage-related outcomes associated with romantic rejection in mobile dating.

Discussion

The purpose of this study was to understand how rejection occurs in mobile dating. Overall, the results demonstrate the contextual affordances of mobile dating in romantic relational formation — or lack thereof — and may serve as the foundation for additional research in this area. Particularly, the nature of asynchrony and user control over the communication process during relational initiation, as well as decreased emotional and relational valences emerge as significant descriptive themes.

MODES OF REJECTION

In addressing the first research question, findings suggest that rejection occurs in six primary ways in mobile dating: ghosting, ignoring, swiping, rejection messages, unmatching, and blocking. Aside from the explicit rejection message, these processes demonstrate the asynchrony of mobile dating app interface. Users may effortlessly and covertly disengage from others. This comes to terms with findings of studies that looked at pre-mobile online dating sites.[44] The most recurrent form of rejection was ghosting which may be defined as the process of unexpectedly withdrawing from previously established communication with another user without providing an explanation. The act of ghosting resonates with what Quiroz (2013) has described as relationship tourism, whereby the increased access and partner options offered by mobile dating \ leads to reduced levels of commitment among users.

The results also identified various interface components like swiping, blocking, and unmatching as prevalent forms of rejection, which further highlight the platform-specific affordances unavailable in offline interaction. For instance, as one respondent noted, rejection enabled through these applications is 'easier than in person'.

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44   e.g., Tong & Walther, Just say 'no thanks'.

EFFECTS OF REJECTION

According to previous conceptualizations, rejection is among the most devastating emotional experiences a person can undergo;[45] however, our results suggest that rejection experienced in mobile dating may be less significant than in offline circumstances. Overwhelmingly, respondents indicated feelings of indifference when describing these events, such as one respondent that referred to rejection as 'not a big deal' — a finding also captured through the semantic network analysis. Moreover, the results highlight the prevalence of rejection in mobile dating, which is perhaps unsurprising given the ever-expanding userbase. For example, several respondents described rejection as 'common' or 'expected', which demonstrates the frequency at which users experience one or more forms of rejection in mobile dating.

Not aligning with previous findings of research regarding online dating sites,[46] our results suggest that the costs of rejection in mobile dating may be considerably less important than they are offline. For instance, as one participant stated, rejection is 'less intense than in-person rejection', which may suggest that the hybridity of mobile dating may mitigate romantic rejection. Given the way rejection occurs, such as through the 'yes/no binary' swiping behavior of some mobile interfaces (i.e., Twitter[47]), users may be less invested, and therefore less affected by these events. In situating the current study within the existing literature, findings may demonstrate the interface differences between online dating sites and mobile dating apps, which likely produce different user attitudes and perceptions of rejection.

Another possible explanation comes from the populations each application caters to. Whereas many of the online dating sites are typically geared toward individuals seeking a long-term, romantic partnership (i.e., marriage[48]), mobile dating apps have gained popularity among distinctly younger populations (Smith, 2016). Accordingly, users of mobile dating apps may be motivated by gratifications that are not restricted to establishing a romantic connection like entertainment, social approval, or casual sex.[49] This echoes previous suggestions that mobile dating apps have contributed to an emerging hook-up culture, shifted cultural norms, and decreased levels of commitment among contemporary daters.[50]

OUTCOMES OF REJECTION

The results suggest that experiences of rejection in mobile dating produce a variety of usage-related outcomes, including altered frequency and perceived success of use. However, results

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45   Knapp, *Social intercourse*; Leary, Emotional responses to interpersonal rejection.
46   Hitsch et al., Matching and sorting in online dating.
47   David, G., & Cambre, C. (2016). Screen intimacies: Tinder and the swipe logic. *Social Media + Society*, *2*(2), 1-11. doi:10.1177/2056305116641976.
48   see Gibbs et al., First comes love, then comes Google.
49   Timmermans & Caluwé, Development and validation of the Tinder motives scale (TMS); Van De Wiele & Tong, Breaking boundaries.
50   Hess & Flores, Simply more than swiping left; Quiroz, From finding the perfect love online to satellite dating; Ranzini & Lutz, Love at first swipe?; Sumter et al., Love me Tinder.

from both thematic and semantic network analyses reveal that most participants reported continuing to use the applications despite having been rejected, which suggests that these experiences are inconsequential. These results may also shed light on the gamification of romantic relationships in the digital age. We argue that online matchmaking platforms are gamified and, consequently, rejection is often viewed differently because online dating blurs the line between fantasy and reality.[51]

Limitations and Future Research

The main limitation of the current study concerns its sample size. Due to the number of open-ended questions in the online questionnaire, response fatigue was observably high and therefore decreased the final sample used for analysis (the total number of started questionnaires was 153, indicating a 56% nonresponse rate). A second limitation concerns the use of self-reported data for analysis. As previous research argues, self-reported data may be subject to social desirability and/or memory bias, and therefore may have influenced the results.[52] Finally, while snowball sampling has been used in similar past research,[53] it does not produce a truly representative sample and therefore decreases the generalizability of the study's findings. With these limitations in mind, future research should test the findings presented herein on larger sample probability samples. Additional research is also needed to investigate how personality traits and individual motives for using mobile dating appear to influence the way rejection is experienced.

Appendix A

Open-Ended Questionnaire Items

1. What is the first thing that comes to mind when you think about being rejected on a mobile dating app?

2. Using easy-to-understand terms, please describe how rejection occurs in mobile dating apps.

3. What other words would you use to describe rejection within mobile dating apps?

4. How do experiences of rejection influence your use of mobile dating apps?

5. When you reject others on mobile dating apps, how do you do this?

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51   Similar to Rocha Santos, P. C. (2018). Gamification of love: A case study of Tinder in Oslo (Master's thesis). Retrieved from http://urn.nb.no/URN:NBN:no-66949.; Whitty, M. T. (2003). Cyber-flirting: Playing at love on the internet. *Theory & Psychology*, *13*(3), 339-357. doi:10.1177/0959354303013003003.

52   Ranzini & Lutz, Love at first swipe?.

53   Van De Wiele & Tong, Breaking boundaries.

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CULTURE

12: A MATCH MADE IN THE CLOUD: JEWS, RABBIS, AND ONLINE DATING SITES

YOEL COHEN AND RUTH TSURIA

Marriage, and establishing a family, are the social cornerstone of Judaism. As a religion, which has as its framework the community and the peoplehood, its self-maintenance draws upon marriage and childbearing. This truism existed over the centuries, but became highlighted after the Holocaust, in which six million Jews were murdered. Marriage and procreation are interdependent, and this gets expression, for example, by the prohibition in Orthodox Judaism on sexuality outside of marriage, and by a married couple being expected to bare children.[1] Marriage in Judaism is an important and happy milestone in the life of religious Jews. An allusion to the role of religion in bringing two people together is found in the adage that a marriage is 'made in Heaven'.

Jewish Orthodox women and men marry relatively young (younger than 24 years old) and have fewer divorces, according to a 2013 Pew Research Report.[2] Traditionally, in the orthodox Jewish marriage the man buys the woman from her family. The original *Halachic* (Jewish religious law) source describing marriage reads, 'A woman is acquired in three ways, and she acquires herself [i.e., divorce] in two ways. She is acquired through money, document, and sexual intercourse [. . .] she acquires herself through a *Get* [divorce document] and through her husband's death.'[3] As can be seen from this text, marriage is considered a purchasing contract, like other economic contracts.[4]

To this day, many Orthodox Jewish marriages are arranged marriages, with a varying degree of agency on the part of the future wife and groom. Jewish Orthodoxy in Israel may be divided between two communities: the modern orthodox and the ultra-Orthodox Haredim (or Haredi). The latter are characterized by cultural withdrawal from modernity while the former believe that it is possible to reconcile a Jewish Torah life with modernity. For example, in the modern orthodox (or in Israel, the so-called National-Religious) community, it is customary for friends, friends of family, or a matchmaker (*shadchan*) to set a date of marriage between two young people. However, once the date is set, it is up to the couple to decide if they wish to continue dating or not. So, the young couple have total agency. In more strictly religious communities, the decision could be already made between two families, but the couple will still go on a date or two, and can still veto the arrangement.[5] Before the wedding day, women and men receive

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1   In non-Orthodox Judaism, notably Reform Judaism and Conservative Judaism, sexuality in long-lasting relationships among unmarried couples — such as in pre-nuptial relationships — is not necessarily prohibited.

2   Cooperman, A., Smith, G. A., Hackett, C., & Kuriakose, N. (2013). *A Portrait of Jewish Americans: Findings from a Pew Research Center survey of US Jews*. Washington, DC: Pew Research Center.

3   Babylonian Talmud Tractate *Kiddushin*, 2a.

4   Babylonian Talmud Tractate.

5   Rockman, H. (1994). Matchmaker matchmaker make me a match: The art and conventions of Jewish

rabbinical counseling about marriage and intimacy. Since in many Orthodox communities, in particular ultra-orthodox Haredi communities, men and women have less social interaction, the purpose of these meetings is to prepare them to live with the other sex, and in particular, to discuss intimacy and family purity.[6]

Patterns of arranging a marriage have changed inside the Jewish community by the arrival of computers – and in particular Internet – no less than elsewhere in the world. The rise of Internet presents numerous opportunities for the religious Jews to meet a spouse. A spate of Jewish websites online has grown up.

Given that Internet itself has become a matter of great controversy among religious groups in Judaism – not just the ultra-Orthodox but in particular – it is instructive to examine how marriage behavior among religious Jews has been affected by information technology. In the Israeli Jewish case, Cohen examined how the religious media tackled – or fail to tackle – sex-related matters, as well as how different religious communities have come to terms or otherwise with information technology.[7] The research literature is remarkably absent about the impact of dating sites among religious communities. To fill this gap, this article examines religious websites used by religious Jews and the attitudes of rabbis to the online dating phenomenon. Given deep concerns among rabbis about Internet, and yet the superior value given by rabbis to marriage as a religious goal it is relevant to examine how rabbis have negotiated the dilemma. As will be seen from the data presented below, a variety of positions among rabbis may be identified regarding their attitudes to online dating. There are those who seek to benefit from the virtues of the new media and all that it suggests. At the other extreme are those who reject any Internet-related activities. In the middle are those who cautiously use these websites but in parallel also recommended not relying entirely upon the sites but also turning to those who are acquainted with the person.

The Haredi religious leadership have placed a partial ban on the Internet and use it mainly for work-related purposes. This reflects the underlying Haredi characteristic of building a cultural ghetto in order to keep away from dangerous cultural influences. But some Haredi rabbis have relented and allow usage of Internet for work and business if only at work. They do insist on Internet being subject to a filter. In practice, surveys show that a considerable number of Haredi families are linked to the Internet at home, but overall, they are believed to do so only with a filter. Still some 43% of Haredim used Internet in 2017 (in contrast to 88%

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arranged marriages. *Sexual and Marital Therapy*, 9(3). 277-284. doi:10.1080/02674659408409593

6   Tsuria, R. (2017). From sin to sick: Digital Judaism & pornography. *Journal of Media & Religion, 16*(4), 117-128. doi:10.1080/15348423.2017.1401407

7   Cohen, Y. (2011). Haredim and the Internet: A hate-love affair. In M. Bailey & G. Redden (eds.), *Mediating faiths: Religion and socio-cultural change in the twenty-first century* (pp. 63-74). London, UK: Ashgate Publishing; Cohen, Y. (2012). *God, Jews and the media: Religion and Israel's media*. New York & London: Routledge; Cohen, Y. (2013). Awkward encounters: Orthodox Judaism and the Internet. *Scripta Instituti Donneriani Aboensis*, *25*, 42-54. Finland: Donner Institute, Åbo Akademi University; Cohen, Y. (2015). Israeli Rabbis & the Internet. In H. Campbell (ed), *Digital Judaism* (pp. 183-203). New York & London: Routledge.

of the non-Haredi population) an increase from 28% in 2008,[8] but very few Haredim use the internet for entertainment.

The modern Orthodox seek to reconcile the Torah life with modernity – as expressed in their members attending university, for example, many modern orthodox rabbis have a secular education in addition to their Torah studies. 'Haredi Leumi' is a sub-stream of modern orthodox which are stricter in their approach including exposure to new media.[9] The Conservative and Reform are miniscule communities is Israel, and they lack official governmental recognition. Their attitude towards the internet is very accepting, and they use it seamlessly.[10]

Jewish Online Dating

In order to understand the background of rabbis' attitudes it is instructive to briefly survey of the growth of Jewish dating websites and their unique characteristics in serving the religious population. Probably the most famous Jewish dating website is Jdate, established as early as 1997. Jdate prides itself as being the leading Jewish dating site and claims to have facilitated 'hundreds of thousands of romances, friendships, engagements and marriages'.[11] Jdate also claims to be globally minded, with 'daughter' sites in Hebrew, German, Spanish and French, but its headquarters and focus are in the USA. According to Google trends, Jdate has been a popular search word in 2004-2006, with a dip in popularity in the last six years. Jdate has also launched a dating app in 2014, which has more than 50,000 installs via Google Play Store alone. Other Jewish dating websites include including Jwed (which focuses solely on dating with the purpose of marriage), Sawyouatsinai (which has professional matchmakers assigned for each users), Yenta (which is location based), TheJMom (in which parents can do the matchmaking) and more. While many of the Jewish websites recognize that a variety of Jewish lifestyles and religious adherence exists, they focus on and promote traditional and religiously oriented approach to *shidduchim* or matchmaking. This approach is made clear in the different websites' focus on the goal of marriage and childbearing, their emphasis on religious identity, and in some cases, the involvement of a traditional *shadchan* or matchmaker or even one's parents. This focus can be seen in the profile building process.

Jdate profile building is relatively easy, and all profiles are screened before they are published. For example, all users must upload a picture when creating their profile, and those pictures are then examined by the website moderators. Then, users are asked to submit some personal information, and here the Jewish, family-oriented focus of the website becomes clear. Out of the six first questions, two are related to family (have kids?, want kids?) and every user must

8   Israel Democracy Institute. (2018). *Haredi society annual report*. Jerusalem, Israel: Israel Democracy Institute Press. [Hebrew]

9   Cohen, Y. (2019). Orthodox Judaism. In A. Grant, A. Sturgill, H. C. Chen, & D. Stout (Eds.). *Religion online: How digital technology is changing the way we worship and pray, Volume 2* (pp. 126-139). California, USA: Praeger Press.

10   Tsuria, R. (2019). Conservative Judaism in the digital age. In Grant, A. Sturgill, H. C. Chen, & D. Stout (Eds.), *Religion online: How digital technology is changing the way we worship and pray, Volume 2* (pp. 144-159). California, USA: Praeger Press.

11   Jdate. (2018). Home. *Jdate.com*. Retrieved from: https://www.jdate.com/en-us.

state their religious affiliation (see figure 1). The selection of religious denomination is very broad. Other aspects of the profile creation are not specifically Jewish but ask regarding interests and hobbies such as biking and camping, and even activities of questionable value for an observant Jew like yoga and gambling.

Additionally, Jdate allows for same-sex relationships.[12] However, homosexual Jews might feel more comfortable using a website which is specific for gay Jews, such as yenteovertherainbow.com. Jdate also allow to select a specific relationship type, ranging from friends to marriage and kids.

Figure 1: Jdate profile creation.

Israeli religious Jews have their own dating websites that focus on the Israeli 'market'. Nine Hebrew religious dating websites were reviewed, and they serve different streams and needs (see Table 1).

Website	Stream	Established
2become1.co.il	Chabad (dati Leumi – Haredi)	2004
Date4dos.co.il	Dati Leumi, Conservative and Masorati (Traditional)	2010
7brachot.co.il	Dati-leumi (modern Orthodox)	2010
kosherdate.co.il	Dati-leumi (modern Orthodox)	2005
zivug4u.co.il	Dati-leumi, and Masorati (Traditional)	2013
kulanu4you.org	Dati-leumi (modern Orthodox), Haredi-leumi (Hardal)	2003
s-net.co.il	dati Leumi, Haredi, Masorati (Traditional)	2003
tan-doo.co.il	dati Leumi (modern Orthodox)	2003
shiduch.hidabroot.org	Haredi	2015

Table 1: Israeli religious dating websites.

Most of the websites serve the *dati-leumi* or modern Orthodox stream – the stream within Israeli Orthodox Judaism most open to media. Many of the websites are aware of the differences and nuances between the streams, and help users self-identify their religious

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12   Jewish Telegraphic Agency. (November 29, 2005). JDate opens up to gay searches. *Jewish Telegraphic Agency (JTA)*. Retrieved from: https://www.jta.org/2005/11/29/lifestyle/jdate-opens-up-to-gay-searches.

identity as part of their profile. S-net (Shidduchim-net) offers six categories for religious affiliation: *Dati-leumi*, *Haredi leumi*, *Dati* light, *Haredi,* former-*Dati,* or *Masorati* (traditional) – see figure 2. In that way, users can self-identify, select their dates based on their religious belonging, and know the religious 'level' of the website itself. Another example can be found in the popular website 7brachot, which had a warning pop-up that read: 'This website in not meant for Haredi people. For them we are currently building a different website, which will not include pictures…' – see Figure 3.
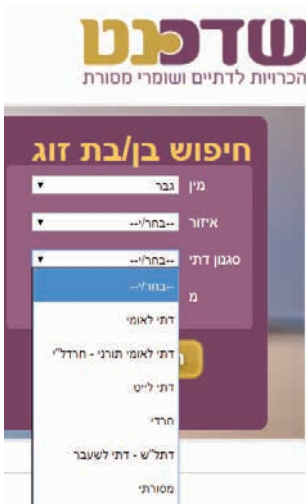
Figure 2: s-net.co.il religious selection.
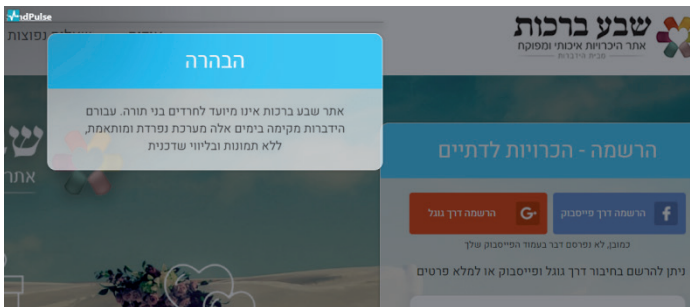
Figure 3: Seven brachot warning to Haredi.

An early Hebrew-based Jewish dating site is 2become1.co.il, with an online presence established in 2004, is based on a matchmaking company that worked offline for many years, and thus combines their traditional offline knowledge with technological innovations. This website, while long-established, is not the most popular one. Date4dos.co.il, established in 2010, claims to have made the most matches in Israel; according to Alexa, date4dos is ranked n=752 in Israel, and 2becoce1 is number n=3807. One of the unique features of the

Israeli based websites is their strong emphasis on religious lifestyle. Therefore, for example, the 'FAQ' in the 7brachot.co.il websites make it explicit that people who do not observe the Jewish religious dictum of *shomerae negiaa*, or an abstinence from any physical contact with the date prior to the marriage, are not welcomed. The websites emphasize their religiosity in different ways. For example, the website shiduch.hidabroot.org, which targets the Haredi population, carries rabbinical *heskamot* or endorsements — undeniably a drawing card for the religious population. This specific website functions with a payment system, in which couples pay to the website, if they choose to marry — as is the custom with offline Haredi matchmakers. An emphasis on marriage and creating a family is quite explicit throughout the different websites. For example, 2become1 explains that 'creating a family in the religious sector is a very important action from a social and religious perspective. The man and woman about to be wed [...] are partaking in a religious act of great importance.'[13] Arguably it is the focus on the religious aspects of matchmaking that allows the rabbis to feel comfortable when embracing these online practices.

Rabbis and Online Dating

Rabbis' attitudes toward online dating were assessed through an analysis of a few selected online Q&A, as well as a broad survey (detailed below).

Online Q&A. The questions addressed to rabbis appear routinely on internet designated sites. The answers provided by the rabbis are illustrative of the emotions which the status of dating websites generates in the Jewish religious milieu and shed a light not only on rabbis' opinions but also on their followers' mindset. For example, one rabbi, Ravid Neger, was asked by a 25-year-old female, a returnee to Judaism, who was waiting to meet 'her intended one' whether she should solely continue with prayer or if she should try her luck with dating websites. She was told by the rabbi: 'I don't reject any way, as long as it fits Jewish religious law (*halakha*). Personally, the best way is relying on God and not one website or another. If one has reached a certain age, then try this. But if one can do without the internet, in my opinion it is preferable.'[14]

Another rabbi, Shai Piron, head of a yeshiva (and a former government minister of education), regarded as moderate and enlightened in the modern orthodox stream, was asked: 'Is it permitted to use such media as dating websites, forums, even chat (which I add with great qualification) — when the intention is very clear: to find somebody with whom one can build a true Jewish home?'[15] Piron replied: 'At your age, when it is clear that your intent is to build a Jewish home, do so. I am more reserved about 'chat groups' that comprise non-religious

13   2become1.co.il. (2018). Home. *2become1*. Retrieved from: https://www.2become1.co.il/.

14   Neger, R. (2016). Can you use online dating? *Israel HaYom*. Retrieved from: https://www.israelhayom.co.il/article/426753. [Hebrew]

15   Piron, S. (2002). Ways to meet people [Hebrew]. *Kipa.co.il*. Retrieved from: https://www.kipa.co.il/%D7%A9%D7%90%D7%9C-%D7%90%D7%AA-%D7%94%D7%A8%D7%91%D7%93%D7%A8%D7%9B%D7%99-%D7%94%D7%99%D7%9B%D7%A8%D7%95%D7%99%D7%95%D7%AA-2/.[Hebrew]

people, although I don't rule them out entirely.'[16] Another leading rabbi, Eliezer Melamad, head of the Bet E-l Yeshiva, and identified with the stricter *Hardal* (haredi leumi), replied the following about dating sites:

> The best way is through a person who is well acquainted with you and knows what is suitable for you. When there is no such person to recommend a suitable match then one may be helped through Internet dating sites. But even after this it would be wise to find somebody offline who is acquainted with the other person and can tell you about the person, and then afterwards to meet, and though this there is a reasonable chance.[17]

As can be seen from these responses, using online dating is permitted, but not encouraged. Rabbis seem to indicate that if there is no other way, and if used carefully and religiously, then online dating is allowed. Rabbis' hesitance, though, is clear. In an even more cutting-edge case, one asked whether it is permitted to create a dating site for those with alternative sexual identities like homosexuals and lesbians, given the prohibition in Orthodox Jewry about single sex relationships. The practical answer, with the endorsement of some key rabbis in the modern orthodox sector, was to create a website designed to match homosexual-inclined Jews with lesbian-inclined Jews – all in the hope of creating a family supervised by a certified orthodox rabbi, Aharela Harel.[18] All and all, these online Q&A highlight various attitudes, which seem to be accepting online dating with some reservations.

Survey. Given the role of rabbis in influencing attitudes in Jewish behavior, rabbis were surveyed for a variety of questions relating to online dating. A poll of 330 Israeli rabbis was carried out to survey various attitudes, amongst which the question of online dating, and specifically, whether in the view of rabbis thought new media contributed to matchmaking.[19] The rabbis surveyed came from five streams: Haredi or Ultra-Orthodox (136 respondents), modern Orthodox (*dati leumi*) (84 respondents), Haredi Leumi ('Hardal') (53 respondents), Conservative (31 respondents), and Reform (25 respondents). Given the small size of the Conservative and Reform streams inside Israel (which are the dominant streams in the US), the samples of these are small.

Overall, there was no unified view among the rabbis when asked if 'the new media contribute to finding a match?' There was an inclination to agree more than to disagree: Seventy-two percent agreed at least to some extent.

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16   Piron, Ways to meet people.
17   Melamed, E. (2006). Matchmaking via the Internet. *Yeshiva.co.il*. Retrieved from: https://www.yeshiva. org.il/ask/20072. [Hebrew]
18   Marilus, A. (2011). With Rabbis' permission: Matchmaking between gays and lesbians. *Ynet*. Retrieved from: https://www.ynet.co.il/articles/0,7340,L-4111584,00.html. [Hebrew]
19   Cohen, Y. (2018). New media and the Rabbinical profession: A case study of Israeli Rabbis. Paper presented at the International Conference on Media, Religion & Culture. University of Colorado in Boulder, August 2018.

Religious Stream	Not at all		To a small degree		To some extent		To a large extent		To a very great extent		Total
	n	%	n	%	n	%	n	%	n	%	N
Haredi (Ultra-Orthodox)	23	21,7%	33	31,1%	39	36,8%	6	5,7%	5	4,7%	106
Nationalist Haredi	0	0,0%	6	11,3%	24	45,3%	18	34,0%	5	9,4%	53
Modern Orthodox	2	2,4%	13	15,9%	27	32,9%	32	39,0%	8	9,8%	82
Conservative	1	3,4%	4	13,8%	8	27,6%	10	34,5%	6	20,7%	29
Reform	0	0,0%	0	,0%	7	35,0%	9	45,0%	4	20,0%	20
Total	26	9,0%	56	19,3%	105	36,2%	75	25,9%	28	9,7%	290

Table 2: Do websites contribute to marital matchmaking – broken down according to religious stream?

Clear differences were found when the survey broke down rabbis according to religious stream and rabbinical occupation. Haredi rabbis were much less inclined than rabbis of other streams to agree 'to a large extent' or 'to a very large extent', a total of 10.4%, in contrast to 43% for rabbis in the Haredi Leumi steam, 49% modern orthodox, 55% Conservative, and 75% Reform rabbis. Yet, Haredi rabbis did not reject this revolutionary path of finding a match (revolutionary in comparison to the traditional offline *shadchan* or matchmaker, which has characterized the Haredi community over hundreds of years, with thirty-seven per cent of Haredi rabbis agreeing 'to some extent'. Only one-fifth (22%) of Haredi rabbis said, 'not at all', that is, rejecting completely the option of online dating. Noteworthy is the fact that '*Hardal*' (Haredi Leumi) rabbis, despite their general opposition to exposure to the wider society, they were far closer to mainstream modern orthodox than they were to Haredi rabbis on the question of whether media contributes to doing matchmaking. Forty-three per cent (43%) of Haredi Leumi rabbis agreed 'to a very large extent' or 'to a large extent' (in contrast to 49% of mainstream modern Orthodox). Moreover, only 11% of Haredi Leumi rabbis agreed 'only to a small degree' or 'not at all' in contrast to 18% mainstream modern orthodox which are regarded as more open on cultural matters (see Table 2). Noteworthy also is the proximity of the Conservative rabbis and modern Orthodox on this question. Forty-five percent of the Conservative rabbis replied that new media could contribute to matchmaking 'to a large extent' or 'to a very great extent' (modern Orthodox 48%), and 17% of the Conservatives replied, 'not at all' (modern Orthodox 17%). This may reflect a more general proximity between these two streams in various areas of Judaism.

We did not find considerable differences between the Rabbis when place of birth or community were examined (data are available from the authors upon request), but the rabbinical occupation did leave a mark on attitudes toward Internet matchmaking. Among the community rabbis, 51% considered new media a good way to get a date 'to a very large extent' or 'to a large extent' – that in contrast to only 36% of rabbis employed as yeshiva teachers. Finally, the most skeptical were *avrechim* (rabbis who study fulltime in the yeshiva): only 15%

of them agreed 'to a very great extent' or 'to a great extent' that internet matchmaking has a positive value (see Table 3). We did not find considerable differences that can be attributed to ethnicity (rabbis of European origin i.e. *Ashkenazim* vs. Rabbis of near east origin i.e. *Sephardim*). Another attempt to examine the impact of ethnic upbringing by looking at the rabbis' country of birth also yielded no significant differences (data are available from the authors upon request). Therefore, it seems that the most notable differentiator in rabbis' attitudes towards online dating was the religious stream to which they belong.

Rabbis Occupation	Not at all		To a small degree		To some extent		To a large extent		To a very great extent		Total
	n	%	n	%	n	%	n	%	n	%	N
Avrech	12	23.1%	18	34.6%	14	26.9%	5	9.6%	3	5.8%	52
Communal rabbi	1	1.1%	6	6.8%	35	39.8%	33	37.5%	13	14.8%	88
Rabbi–Teacher	8	8.5%	15	16.0%	36	38.3%	27	28.7%	8	8.5%	94
Total	21	8.9%	39	16.7%	85	36.3%	65	27.8%	24	10.3%	234

Table 3: Do websites contribute to marital matchmaking, broken down according to rabbinical occupation?

Jewish Religious Law Regarding Online Dating

Another indicator of a rabbi's position towards online dating is his stance regarding the implementation of religious law in romantic matters in the online surroundings. Jewish religious law (*halakhah*) has three major legal concerns about online dating websites: a concern for modesty in sexual-related matters (*tzniut*), a prohibition on social gossip (*loshon hara*), and the requirement for accuracy in information transfer. In Judaism, the right to know is subservient to the right to privacy.[20]

In relation to *Tzniut*, or the topic of modesty, different branches of Judaism interpret sexual modesty differently. Nudity is looked on negatively [Deuteronomy 23:15]. Orthodox Judaism forbids a man to look on a female immodestly attired; in the ultra-Orthodox community this includes the uncovered hair of a married woman. *Tzniut,* or modesty, is discussed at length in Jewish sources, in rather vivid and technical terms concerning appropriate dress code – such as the amount of skin or hair (the latter in the case of married women) that may be revealed, size of hemlines, and the lengths of skirts and sleeves.[21]

The question of extramarital romantic relationships on the Internet has been addressed by rabbis, referring specifically to whether it is tantamount to adultery. According to one

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20   Cohen, *God, Jews and the media.*
21   Cohen, *God, Jews and the media.*

modern orthodox rabbi, Yair Lerner,[22] while a couple in which one partner carried out an online romantic relationship is not obligated to divorce, which would be the case, for example, where one partner has had extramarital relations, such a deed is a profound breach of Jewish values, and the rabbis, Lerner argues, recommends that the pair divorce.

Regarding *loshon hara* – the religious prohibition of social gossip – there was a tendency among rabbis who agreed that social networks may incur social gossip – not to think that new media is useful for matchmaking. Thus, only 29% and 45% of those who were concerned that social networks may result in social gossip agreed to a 'very great extent' or 'to a large extent' that new media contributes to matchmaking. In comparison, 69% of those respondents who were inclined to disagree that social networking leads to social gossiping agreed to 'a very great extent' and 'a great extent' that new media helps matchmaking. Thirty-two percent of those who 'agreed a lot' that social networking may cause social gossip did not 'agree at all' or 'only to a small extent' that new media can contribute to matchmaking for purposes of marriage. It seems that rabbis' general attitude towards the use of new media for socializing impacted to some degree their attitudes towards online dating.

Similarly, there was some limited affinity between a rabbi's views on whether Internet damages the Jewish rule of modesty or not and whether the rabbi thought that news media could contribute to matchmaking. Thus 26% and 48% of those rabbis who 'agreed a lot' or were 'inclined to agree' that Internet damages the Jewish rule of modesty agreed to 'a large extent' or to 'a very great extent' that new media can contribute to matchmaking. In contrast, 59% and 47% of those rabbis who were 'inclined to disagree' or did 'not agree at all' respectively that Internet damaged modesty agreed 'to a very great extent' or to a great extent' that new media contributes to matchmaking.

Rabbis' Usage of New Media

Does the rabbis' own usage of new media have an impact on their attitude toward Internet dating? A correlation between a rabbi's usage of new media and whether the rabbi agreed that new media contributes to matchmaking would seem reasonable since rabbis who personally use the Internet might have a more positive view of Internet matchmaking. Indeed, the data show that there was a close relationship between a rabbi's usage of new media and whether the rabbi thought that matchmaking was advanced by new media: the more the rabbi used new media, the more he was inclined to agree that matchmaking was advanced by new media. The converse was also true: the less the rabbi used new media, the less he was inclined to agree. Thus, 58% and 50% of rabbis who used the internet 'to a very great extent' or to a 'great extent' respectively agreed 'to a very great extent' or to a great extent' that new media helped matchmaking. By contrast, only 13% and 22% of rabbis who did not surf the Internet 'at all' or only 'to a small degree' agreed to 'a great extent' or to 'a very great extent'.

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22   Lerner, Y. (2005). 'Kesher romanti B'Internet' [Hebrew: A romantic relationship on the Internet]. Alon Shevut: *Tehumin, 25,* pp. 227-230.

A principal pillar in Judaism is the need to provide accurate information i.e. not to lie and mislead intentionally. Rabbis are concerned about the fact that information in online dating websites might be incomplete. According to Yosef Elnekaveh, a 'hardal' (Haredi Leumi) rabbi:

> There is a phenomenon — I don't know the extent — of people publishing things which are incorrect about themselves with an interest to cause distress to those they meet. Suddenly the other person discovers things unbelievable. If one goes into dating websites one should get names of people who know that person in order that the encounter will not be based on a few lines on the Net but upon a serious recommendation. If the person is not prepared to give names of referees, it is better to give up on the meeting rather than enter an unpleasant labyrinth.[23]

There was no clear pattern of relationship between the degree that rabbis use social networking sites and whether the rabbi agreed or not that the new media contributed to matchmaking. Three percent of all rabbis surveyed use social networks 'very frequently'; 17% 'frequently', 7% 'from time to time', 8% 'infrequently', 67% 'very infrequently'. Even 53% and 26% of all rabbis surveyed, who responded that they use social networking 'infrequently' or 'very infrequently' respectively, replied that they agreed 'to a very great extent' or to 'a great extent' that Internet could contribute to matchmaking.

Discussion

This study sought to examine Israeli rabbis' reactions and attitudes toward online dating, and the general state of religious Jewish online dating today. It was found that factors influencing the rabbis' views on whether or not new media contributes to matchmaking include: 1) the specific rabbinical occupation; 2) the religious stream a rabbi was affiliated with; and 3) the rabbi's views on whether the new media infringed on privacy, incurred the prohibition on social gossip, and whether the Internet infringed the laws of modesty. The rabbi's own usage of the Internet (but not of social media!) also played a role. Overall the tension of Internet use and religious affiliation suggests that the more that rabbi thinks that tension exists the more the rabbi is hesitant to say that new media contributes to matchmaking. There is a greater tendency among rabbis who either are 'inclined to agree' or 'inclined to disagree' that tension between new media and religion is inevitable to agree 'to a large extent' or to 'a very great extent' that new media could contribute to matchmaking. The lack of effect of social media usage (in contrast with the effect of general internet usage) may have to with the fact that many rabbis either do not use social media or do not distinguish it from other parts of the internet.

Overall, Israeli rabbis are more supportive of than objecting to using the Internet for the purpose of dating. One way to understand this is the religious importance of matchmaking and the sanctity of marriage in Jewish thought. The rabbis' approval can be understood as part of

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23   Elnekaveh, Y. (2006). Matchmaking online [Hebrew]. *Moreshet.co.il*. Retrieved from: http://shut. moreshet.co.il/shut2.asp?id=69612.

the long traditional focus in marriage as the cornerstone of Jewish life.[24] In a theology where matchmaking is so important, all tools – even online tools – are 'kosher' for this sacred goal. Furthermore, the review of existing Jewish dating websites might further explain this support. These dating websites are created for and by these communities, thus adhering to many of the religious principles. The creation of these religious 'niche' dating websites is aligned with the Jewish community needs. Therefore, we can see how this is a *religious* use of the Internet by religious Jews, as suggested by previous media scholars.[25]

Conclusion

Our findings reflect the wider challenges which Judaism has faced over centuries of remaining relevant in times of change. In the interests of self-preservation, and in response to filling the Jewish People's *raison d'etre* to continue as a people, marriage and family are necessarily a primary motive. The responses of the rabbis and dating website creators in our study reflects this wider philosophy, thus accepting even questionable tools like new media for the purpose of maintaining this philosophy. The study also highlights how rabbis with reservations about new media negotiate the dilemmas.

On the one side of the spectrum, the Orthodox – Haredi, Haredi Leumi (*Hardal*) and mainstream modern Orthodox – rejected change or compromised their positions. As shown, the ultra-Orthodox Haredim were the most hesitant in whether to accommodate online dating websites with the traditional *shadchan* or matchmaker and offline arranged marriages which have characterized their community over the centuries. The Hardal proximity to the mainstream modern Orthodox was surprising given its own hesitance concerning computer-related matters, leading to exposure to the wider secular world. This confirms the urgency and high expectations which this stream gives to such other high priority matters like marriage. So, in negotiating the danger of access to the Internet and the positive command to marry, matters are undoubtedly balanced towards the latter.

On the other end of the spectrum, the non-Orthodox – the Reform and Conservative – particularly the former – confirm the readiness of the Reform's progressive *halakha* (Jewish religious law) and the Conservative's continuous *halakha*, respectively to embrace change, and reject any idea that Judaism is not applicable to the twenty-first century. Thus, these rabbis tend to support new media usage for dating purposes.

Jewish law-making has historically negotiated between religiously inspired laws and the changing needs of the community, thus not legislating in ways which the community cannot live up to. In this research we have shown how in the case of online dating, this growing need within the religious Jewish Israeli community has been met with overall acceptance from the

24   Rockman, Matchmaker matchmaker.
25   See Katz, Y. (2012). Technology use in the religious communities in Israel: Combining traditional society and advanced communications. *Journal of Religion, Media & Digital Culture, 3*(1), 1-30. doi:10.1163/21659214-90000014; Campbell, H., and Golan, O. (2011). Creating digital enclaves: Negotiation of the Internet among bounded religious communities. *Media, Culture & Society, 33*(5), 709-724. doi:10.1177/0163443711404464

religious leaders. In other words, this study shows how the needs of the community and the importance of the marriage trump the rabbinical hesitance to new media. Religiously adherent dating websites seem to be a small, but growing, niche, and rabbis seem to, by and large, to support the use of new media for online dating and matchmaking, especially those websites which are tailored to the religious needs of the community. Thus, new media is negotiated to fit the religious values of the community, both in terms of protecting the community boundaries, and using new media with the hopes of increasing love within the community.

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Rockman, H. (1994). Matchmaker matchmaker make me a match: The art and conventions of Jewish arranged marriages. *Sexual and Marital Therapy*, *9*(3). 277-284. doi:10.1080/02674659408409593

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13: CROSSING BOUNDARIES? DATING PLATFORMS AND INTERRACIAL ROMANCE

GIULIA RANZINI

The last decade has seen the emergence of online dating as a frequently used tool for adults to find and meet significant others.[1] In a study carried out in 2013, Pew Research found that as many as 15% of American adults and 27% of young adults regularly used dating sites/apps to meet potential partners.[2] Additionally, it is estimated that almost 5% of Americans in marriages or long-term relationships might have first gotten in touch with each other through online dating.[3] This increase in popularity of dating platforms suggests that, in the last decade, a shift might have taken place in users' perception of online romance. In fact, early studies of perceptions around online encounters reported negative and rather stigmatizing views from non-users, characterizing those looking for romance online as 'desperate' or 'uncapable of finding love in real life'.[4] In the span of only ten years, however, societal views of online dating appear to have changed for the better: A recent survey based on a representative sample of U.S. adults highlighted how almost two thirds of Americans considered online dating as 'a good way to meet people'.[5]

Online dating has changed how individuals meet each other, by making it easier for users to connect with strangers. However, is it also capable of influencing *whom* individuals choose? Can online dating increase the likelihood of users initiating relationships with individuals from a different race? In the complex picture of race relations, this chapter aims to explore if online dating can play a role into broader social relations by influencing the choices of individual users.

The role of technology and of online platforms has emerged as a topic of discussion as interracial marriages have been observed to increase across several countries. A recent study found that one out of six newlyweds in the United States was married to a person from a different ethnic background, and one out of seven infants could be considered multiracial.[6] Similarly, a study across European countries found that between 2005 and 2010, the share

1   Bryant, K., & Sheldon, P. (2017). Cyber dating in the age of mobile apps: Understanding motives, attitudes, and characteristics of users. *American Communication Journal*, *19*(2), 1-15.
2   Lenhart, A., & Duggan, M. (2014). Couples, the Internet, and social media. *Pew Research Center*. Retrieved from http://www.pewinternet.org/2014/02/11/couples-the-internet-and-social-media/.
3   Lenhart & Duggan, Couples, the Internet, and social media.
4   Anderson, T. L. (2005). Relationships among Internet attitudes, Internet use, romantic beliefs, and perceptions of online romantic relationships. *CyberPsychology & Behavior*, *8*(6), 521-531. doi:10.1089/cpb.2005.8.521
5   Smith, A., & Anderson, M. (2015). 5 facts about online dating. *Pew Research Center*. Retrieved from http://www.pewresearch.org/fact-tank/2015/04/20/5-facts-about-online-dating/.
6   Bialik, K. (2017). Key facts about race and marriage, 50 years after Loving v. Virginia. *Pew Research Center*. Retrieved from http://www.pewresearch.org/fact-tank/2017/06/12/key facts-about-race-and-marriage-50-years-after-loving-v-virginia/.

of marriages featuring one foreign born partner increased in 26 out of the 30 surveyed states.[7] With the increase of interracial marriages, researchers have also observed an improvement in the perceived acceptability of such relationships. In a study from 2015, the percentage of white US respondents who would be opposed to a relative marrying someone from a minority group had dropped to 14% for Blacks (was 63% in the 1990s), and to 9% for Asians and Hispanics (was respectively 20% and 21% in the 1990s[8]).

It would be tempting to think that perceptions might univocally follow visibility, and therefore that with when online dating and interracial relationships becoming more common, societies might have become more accepting of both. The reality is, however, probably more complex: Changes in perception are typically a result of many interplaying elements, ranging from individual differences to the broader political climate.

Yet, an interesting approach to how online dating might play a role in individuals' interracial dating behavior is offered by social networks theory. A theoretical study by Ortega and Hergovich[9] introduced online technology and dating platforms to a model that could explain the recent increase in interracial marriages in the United States. The argument behind the paper is based on one of the foundations of social network theory, i.e. the contrast between strong and weak ties. In a standard scenario, each individual's network of relationships is characterized by a mixture of 'strong ties' (i.e. family and friends, relied on for intimacy and support[10]) and 'weak ties' (i.e. acquaintances, relied on for information and casual interactions[11]). Such strong and weak ties are also, in many instances, the channel through which individuals meet their romantic partners.[12] This mechanism, however, is bound to promote racial similarity in relationships, as the structures of family and friend groups are more likely to show racial homogeneity than diversity.[13] According to Ortega and Hergovich,[14] however, the emergence of online dating might extend the networks of users to include 'absent ties', i.e. potential partners with whom no other connection exists than the one provided by platform-based interaction. By being exposed to users, who would otherwise be outside of their existing network of ties, individuals increase the potential for heterogeneity in their

7   Lanzieri, G. (2012). Mixed marriages in Europe 1990-2010. In D.-S. Kim (ed.), *Cross-border marriage. Global trends and diversity*. Seoul: Kihasa, pp. 81-122.

8   See Bialik, Key facts about race and marriage.

9   Ortega, J., & Hergovich, P. (2017). The strength of absent ties: Social integration via online dating. *arXiv preprint arXiv:1709.10478*. doi:10.2139/ssrn.3044766

10 Nelson, R. E. (1989). The strength of strong ties: Social networks and intergroup conflict in organizations. *Academy of Management Journal, 32*(2), 377-401. doi:10.2307/256367

11 See Constant, D., Sproull, L., & Kiesler, S. (1996). The kindness of strangers: The usefulness of electronic weak ties for technical advice. *Organization Science, 7*(2), 119-135. doi:10.1287/orsc.7.2.119; Granovetter, M. S. (1973). The strength of weak ties. *American Journal of Sociology, 78*(6), 1360-1380. doi:10.1086/225469; Granovetter, M. (1983). The strength of weak ties: A network theory revisited. *Sociological Theory, 1*, 201-233. doi:10.2307/202051.

12 Thomas, R. J. (2018). Online exogamy reconsidered: Estimating the Internet's effects on racial, educational, religious, political and age assortative mating. Manuscript submitted for publication. doi:10.31235/osf.io/tzsy9

13 McPherson, M., Smith-Lovin, L., & Cook, J. M. (2001). Birds of a feather: Homophily in social networks. *Annual Review of Sociology, 27*(1), 415-444. doi:10.1146/annurev.soc.27.1.415

14 Ortega & Hergovich, The strength of absent ties.

relationships. Race is one of the channels through which such heterogeneity can express itself. Empirical research has found some evidence that couples who meet online might be more likely to be interracial. A study based on longitudinal data collected in the USA between 2009 and 2017 found that married or cohabitating couples, who originally met online, are about six percent more likely to be interracial, after controlling for respondents' location, income, as well as their socio-economic-status.[15]

Can we, therefore, consider online dating as the gateway to a diversified less segregated society? If online dating technology offers a valuable channel for users to explore 'absent ties', by means of an extended network of plausible dating options, not all the consequences go in the direction of social integration. Several studies identified sexual racism on dating platforms as a rather common experience, especially for homosexual users.[16] Additionally, even accounting for the many possible motivations behind the preferences of individuals, patterns of racial bias in online dating still emerge. For example, research on the American version of OkCupid found that Black women and Asian men faced the highest rejection rate from other users.[17] A further study, exclusively focused on users who actively filtered out individual races from their search results, found a similar pattern: 'Black' was the most excluded race by men (including by Black men) and 'Asian' was the most excluded category by women - including by Asian women.[18]

Such patterns of choice and exclusion suggest that while the 'online dating market' indeed extends the options of individual users, race might still play an important role in determining whether they are chosen or rejected.[19] As race appears to be a non-neutral factor in relation to online dating, it is important to explore why that might be the case. In the next sections, the literature about the role of race in online dating will be covered, providing some insight on the formation of online interracial romantic relationships.

The Warranting Value of Race

Many are the elements that dating platforms have in common with Social Network Sites

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15   Thomas, Online exogamy reconsidered.
16   Callander, D., Newman, C. E., & Holt, M. (2015). Is sexual racism really racism? Distinguishing attitudes toward sexual racism and generic racism among gay and bisexual men. *Archives of Sexual Behavior*, *44*(7), 1991-2000. doi:10.1007/s10508-015-0487-3; Callander, D., Holt, M., & Newman, C. E. (2016). 'Not everyone's gonna like me': Accounting for race and racism in sex and dating web services for gay and bisexual men. *Ethnicities*, *16*(1), 3-21. doi:10.1177/1468796815581428; Riggs, D. W. (2013). Anti-Asian sentiment amongst a sample of white Australian men on Gaydar. *Sex Roles*, *68*(11-12), 768-778. doi:10.1007/s11199-012-0119-5
17   Feliciano, C., Robnett, B., & Komaie, G. (2009). Gendered racial exclusion among white Internet daters. *Social Science Research*, *38*(1), 39-54. doi:10.1016/j.ssresearch.2008.09.004; Rudder, C. (2014). Race and attraction 2009-2014. The Blog — *OkCupid*. Retrieved from https://theblog.okcupid.com/race-and-attraction-2009-2014-107dcbb4f060.
18   Robnett, B., & Feliciano, C. (2011). Patterns of racial-ethnic exclusion by Internet daters. *Social Forces*, *89*(3), 807-828. doi:10.1093/sf/89.3.807
19   Toomey, N. (2017). Humanitarians of Tinder: Constructing whiteness and consuming the other. *Critical Ethnic Studies*, *3*(2), 151-172. doi:10.5749/jcritethnstud.3.2.0151

(SNS): for example, they are based on profiles, which users construct by providing essential information like their names, ages and location, they feature private messaging systems and, in their more modern, app-based versions, they emphasize the friends in common between a user and a potential date.[20] In addition, location-based real time dating apps like Tinder or Happn have strengthened the connection of dating platforms with SNS by making it necessary, or at least very helpful, for users to log-in through their Facebook or Instagram accounts.[21] This gives rise to dating profiles that reflect a 'curated' online identity: users carefully select the information to portray in order to attract courters and be selected by a potential significant other.[22]

In this sense, having a strategy behind self-presentation becomes even more important for users of dating platforms than within standard SNS-based interactions. In fact, while, for example, the majority of users' Facebook friends tend to be individuals with whom they have some sort of offline connection,[23] profiles on a dating website represent the first impression users have of each other. As such, the information users include on a profile represents the entirety of information available to their peers. This might push them to craft their online profiles selectively, so as to maximize their chances of being approached by the 'right kind' of potential significant others.[24] At the same time, users must balance between desirability and authenticity. As online interactions are often prelude for real life encounters, users will not want to appear in person as completely different from who they are online.[25]

Warranting theory has been employed to explain interactions in online dating. According to the theory, in an environment characterized by reduced cues, such as a dating platform,

20   Ellison, N., Heino, R., & Gibbs, J. (2006). Managing impressions online: Self-presentation processes in the online dating environment. *Journal of Computer-Mediated Communication*, *11*(2), 415-441. doi:10.1111/j.1083-6101.2006.00020.x; Duguay, S. (2017). Dressing up Tinderella: Interrogating authenticity claims on the mobile dating app Tinder. *Information, Communication & Society*, *20*(3), 351-367. doi:10.1080/1369118X.2016.1168471

21   Ranzini, G., & Lutz, C. (2017). Love at first swipe? Explaining Tinder self-presentation and motives. *Mobile Media & Communication*, *5*(1), 80-101. doi:10.1177/2050157916664559

22   Hogan, B. (2010). The presentation of self in the age of social media: Distinguishing performances and exhibitions online. *Bulletin of Science, Technology & Society*, *30*(6), 377-386. doi:10.1177/0270467610385893

23   Heirman, W., Walrave, M., Vermeulen, A., Ponnet, K., Vandebosch, H., & Hardies, K. (2016). Applying the theory of planned behavior to adolescents' acceptance of online friendship requests sent by strangers. *Telematics and Informatics*, *33*(4), 1119-1129. doi:10.1016/j.tele.2016.01.002; Manago, A.M., Taylor, T., & Greenfield, P.M. (2012). Me and my 400 friends: The anatomy of college students' Facebook networks, their communication patterns, and well-being. *Developmental Psychology*, *48*(2), 69-380. doi:10.1037/a0026338; Pempek, T. A., Yermolayeva, Y. A., & Calvert, S. L. (2009). College students' social networking experiences on Facebook. *Journal of Applied Developmental Psychology*, *30*(3), 227-238. doi:10.1016/j.appdev.2008.12.010; Yang, C. C., & Brown, B. B. (2016). Online self-presentation on Facebook and self development during the college transition. *Journal of Youth and Adolescence*, *45*(2), 402-416. doi:10.1007/s10964-015-0385-y.

24   Ellison et al, Managing impressions online; Hitsch, G. J., Hortaçsu, A., & Ariely, D. (2010). Matching and sorting in online dating. *American Economic Review*, *100*(1), 130-63. doi:10.1257/aer.100.1.130

25   Ellison, N. B., Hancock, J. T., & Toma, C. L. (2012). Profile as promise: A framework for conceptualizing veracity in online dating self-presentations. *New Media & Society*, *14*(1), 45-62. doi:10.1177/1461444811410395

user profiles are evaluated based on the degree to which they are perceived to have been manipulated by their owner.[26] Information that is more difficult to manipulate is considered to have a higher 'warranting value', i.e. to be more representative of the actual person behind the profile.[27] Previous research on online dating has found the warranting value of information to act like an uncertainty reduction mechanism for users who browse through profiles: Because users assume that most of the information provided by others (including pictures) can be, or has been, manipulated, they will find non-modifiable cues much more reliable.[28] Warranting theory is thought to take place in most types of online interaction, but when it comes to dating platforms, the exaggeration of details and similarly small deceptions are common. While dating online, unalterable profile elements can determine the choice or rejection of an individual user.

What role does race play, within this framework? Even within the limited amount of information shared by users on dating platforms, racial signaling still takes place. Racial origin can be determined from a user's physical appearance but also from far more subtle elements like information about their education, or the spelling of their name.[29] Previous research has found a tendency for users to slightly misrepresent physical characteristics like height or weight in order to appear more desirable.[30] However, even when a small amount of deception is expected, users of dating platforms do not find every misrepresentation equally acceptable. In fact, while individuals tolerate a degree of impression management around one's interests, they are much less accepting of deception about one's less alterable physical features such as eye color or body shape.[31] This is partly due to the highly visual nature of dating platforms: Especially photographs are 'tying individuals to their identity',[32] i.e. setting expectations for an offline meeting. Therefore, the physical elements from a person's racial identity, such as their skin color or eye shape, can be considered to have an important warranting value.[33]

26   DeAndrea, D. C., & Carpenter, C. J. (2018). Measuring the construct of warranting value and testing warranting theory. *Communication Research*, *45*(8), 1193-1215. doi:10.1177/0093650216644022

27   Walther, J. B., Van Der Heide, B., Hamel, L. M., & Shulman, H. C. (2009). Self-generated versus other-generated statements and impressions in computer-mediated communication: A test of warranting theory using Facebook. *Communication Research*, *36*(2), 229-253. doi:10.1177/0093650208330251

28   Gibbs, J. L., Ellison, N. B., & Lai, C. H. (2011). First comes love, then comes Google: An investigation of uncertainty reduction strategies and self-disclosure in online dating. *Communication Research*, *38*(1), 70-100. doi:10.1177/0093650210377091; Walther et al., Self-generated versus other-generated statements.

29   Edwards, R., & Caballero, C. (2008). What's in a name? An exploration of the significance of personal naming of 'mixed' children for parents from different racial, ethnic and faith backgrounds. *The Sociological Review*, *56*(1), 39-60. doi:10.1111/j.1467-954X.2008.00776.x

30   Caspi, A., & Gorsky, P. (2006). Online deception: Prevalence, motivation, and emotion. *CyberPsychology & Behavior*, *9*(1), 54-59. doi:10.1089/cpb.2006.9.54; Toma, C. L., Hancock, J. T., & Ellison, N. B. (2008). Separating fact from fiction: An examination of deceptive self-presentation in online dating profiles. *Personality and Social Psychology Bulletin*, *34*(8), 1023-1036. doi:10.1177/0146167208318067

31   Toma et al., Separating fact from fiction.

32   Toma et al., Separating fact from fiction, p. 1025.

33   Hall, J. A., Park, N., Song, H., & Cody, M. J. (2010). Strategic misrepresentation in online dating: The effects of gender, self-monitoring, and personality traits. *Journal of Social and Personal Relationships*, *27*(1), 117-135. doi:10.1177/0265407509349633; Johnson, B. K., Vang, M. H., & Van

This is coherent with Stryker's[34] idea that race, like gender, can be considered a *master status* i.e. a trait that, in certain circumstances, is predominant over all other social characteristics.[35] As such, in the reduced-cues environment of an online dating platform, race is explicitly *present* as an element of evaluation for potential partners, comparably with an offline setting. In the absence of peer-pressure or other social norms, users might be more open to choose to connect and interact with someone from a different racial background.[36] At the same time, if race is perceived as having higher warranting value than other information shared by users, it can also emerge more explicitly as an element based on which users are chosen or rejected. It is therefore not surprising that previous research found that individuals with specific ethnic appearances struggled more to find partners online, leading them to perceive their race as less desirable on the online dating market.[37]

Online Dating and the Heterogeneity of Couples

As previously mentioned, the most palpable change introduced by online dating is the extension of users' pool of potential partners.[38] In fact, while the likelihood of two individuals meeting offline is most often tied to the friends, places, work or interests they have in common, online platforms make it possible for users to start a conversation without sharing virtually anything. This increases the chance that couples whose relationships start online present higher degrees of assortment than those who meet in more traditional settings.

A significant amount of research has focused on racial heterogeneity i.e. the internal diversity of couples, identifying different elements that could influence it. Several studies have highlighted the role of peer support, or lack thereof: Individuals with strong connections to their families and communities of peers might feel disincentivized to romantically connect to someone from a different background.[39] Heterogeneity can also change in the different phases of a couple's relationship. A study by Bruch, Feinberg and Lee[40] suggests that the crossing of socially determined group boundaries like race is more sustainable early in the lives of couples rather than later, when both expectations and pressure from peer groups are presumably stronger. In this sense, online dating platforms, and especially dating apps, whose

Der Heide, B. (2015). Show me the goods. *Journal of Media Psychology*, *27*(1), 3-10. doi:10.1027/1864-1105/a000126

34 Stryker, S. (1986). Identity theory: Developments and extensions. In K. Yardley & T. Honess (eds.), *Self and identity* (pp. 89-104). New York: Wiley.

35 Hogg, M. A., Terry, D. J., & White, K. M. (1995). A tale of two theories: A critical comparison of identity theory with social identity theory. *Social Psychology Quarterly*, *58*(4), 255-269. doi:10.2307/2787127

36 Ortega & Hergovich, The strength of absent ties.

37 Callander et al., Is sexual racism really racism?; Callander et al., 'Not everyone's gonna like me'.

38 Hitsch et al., Matching and sorting in online dating.

39 Bratter, J. L., & Eschbach, K. (2006). 'What about the couple?' Interracial marriage and psychological distress. *Social Science Research*, *35*(4), 1025-1047. doi:10.1016/j.ssresearch.2005.09.001; Herman, M. R., & Campbell, M. E. (2012). I wouldn't, but you can: Attitudes toward interracial relationships. *Social Science Research*, *41*(2), 343-358. doi:10.1016/j.ssresearch.2011.11.007

40 Bruch, E., Feinberg, F., & Lee, K. Y. (2016). Extracting multistage screening rules from online dating activity data. *Proceedings of the National Academy of Sciences*, *113*(38), 10530-10535. doi:10.1073/pnas.1522494113

main goal is to facilitate quick and fleeting connections between users, can be thought of as a tool through which users can overcome group boundaries, if they so wish.[41] Counter-intuitively, however, the results of a few studies suggest that a higher degree of heterogeneity remains among married couples who met online, compared to those who did not.[42] Dutton, Helsper, Whitty, Li, Buckwalter and Lee[43] found that married individuals who met their spouses through online dating are more likely to differ from them in terms of age and education. A study by Lee[44] highlighted how South Korean couples who met on the Internet are more likely to have age gaps, and to differ in the type of employment.

However, to this day, only few studies have focused on interracial marriages that started online. A notable exception is offered by Thomas' longitudinal study:[45] based on a sample of US citizens data collected between 1996 and 2017, this research provides an insightful comparison of the heterogeneity of married couples who first connected online, compared to those who met under more traditional circumstances. The results of this study indicated that couples who met through a dating platform have over one and a half times greater odds of being in an interracial relationship. Interestingly, an even stronger effect is found for couples who met online, but without the help of a dating platform.[46] This finding offers an interesting point of reflection as to whether the interfaces of dating platforms might play a role in users' choices of a partner, especially when ethnicity is not a common trait.

Additional studies found some evidence in support of the idea that dating platforms might, indeed, have an influence on users' dating behavior. In their study of dating apps, Hobbs, Owen and Gerber[47] suggest that users employ 'hook-up' applications such as Tinder specifically because of *whom* they can meet, as well as *how* they can meet them. The low-stake environment of dating apps makes it possible for users to meet people almost accidentally, as one respondent claimed: 'It was kind of just getting out and meeting different sorts of guys to the ones that I've hung out with in my social circle in the past.'[48] This would suggest that individuals choose Tinder also *because* of its minimal filtering process.[49] This type of approach, combined with the ease of GPS-based apps, can facilitate the crossing of group

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41 Han, C. S., & Choi, K. H. (2018). Very few people say 'no whites': Gay men of color and the racial politics of desire. *Sociological Spectrum*, *38*(3), 145-161. doi:10.1080/02732173.2018.1469444

42 Lee, S. (2016). Effect of online dating on assortative mating: Evidence from South Korea. *Journal of Applied Econometrics*, *31*(6), 1120-1139. doi:10.1002/jae.2480; Rosenfeld, M. J., & Thomas, R. J. (2012). Searching for a mate: The rise of the Internet as a social intermediary. *American Sociological Review*, *77*(4), 523-547. doi:10.1177/0003122412448050; Thomas, Online exogamy reconsidered.

43 Dutton, W. H., Helsper, E. J., Whitty, M. T., Li, N., Buckwalter, J. G., & Lee, E. (2009). The role of the Internet in reconfiguring marriages: A cross-national study. *Interpersona: An International Journal on Personal Relationships*, *3*(supp2), 3-18. doi:10.5964/ijpr.v3isupp2.73

44 Lee, Effect of online dating.

45 Thomas, Online exogamy reconsidered.

46 Thomas, Online exogamy reconsidered.

47 Hobbs, M., Owen, S., & Gerber, L. (2017). Liquid love? Dating apps, sex, relationships and the digital transformation of intimacy. *Journal of Sociology*, *53*(2), 271-284. doi:10.1177/1440783316662718

48 Hobbs et al., Liquid love?, p. 17.

49 Ward, J. (2016). Swiping, matching, chatting: Self-presentation and self-disclosure on mobile dating apps. *Human IT: Journal for Information Technology Studies as a Human Science*, *13*(2), 81-95.

boundaries such as race. However, many 'older' online dating platforms still offer users the option to exclude, or prioritize, individuals from a specific race.[50] Even on dating apps, where race is not typically provided as a filter for profiles, users find ways to exclude specific races, for example by declaring in their profile whom they wish to avoid.[51] Therefore, while dating platforms have the potential to be less racially segregated than other social spaces we inhabit on a daily basis,[52] it appears clear that design alone cannot exclude the same prejudice and bias that operate offline from appearing in interactions on the platforms.

Personal Preference or Racial Bias?

If it is true, as argued in the previous sections, that online dating introduces 'absent ties' within users' networks of potential partners, it is also true that such is not the only mechanism influencing connections on dating platforms. For example, many dating apps allow users to see how many friends they have in common with a potential date. More similarly to what happens offline, this feature can serve as incentive to other users in pursuing weak ties (i.e. friends of friends) over complete strangers. Such a choice results advantageous in terms of uncertainty reduction: A displayed connection between users works as an identity anchor[53] confirming that an online profile corresponds to an existing person. This mechanism can offset concerns about lack of authenticity and even fraud[54] and can partially explain the findings of several studies, which indicate that a vast majority of users on dating platforms choose individuals with a similar racial background to their own.[55]

The aggregation of individual user preferences, however, led researchers to hypothesize that more complex dynamics than simple intra-race preferences might exist behind the choice of potential partners. While many elements contribute to the choice, or to the rejection, of an individual person, it appears that belonging to a specific minority might lower an individual's opportunities on the online dating market, independently from their sexual orientation.[56] It would be difficult to consider whether individuals would make similar choices in a face-to-face scenario, were they to participate, for example, in a speed-dating session with thousands of guests. Yet, the combination of the semi-anonymity of profiles with the scarce social

50   Rudder, Race and attraction.

51   Winder, T. J., & Lea, C. H. (2018). 'Blocking' and 'filtering': A commentary on mobile technology, racism, and the sexual networks of young black MSM (YBMSM). *Journal of Racial and Ethnic Health Disparities*, *6*(2), 231-236. doi:10.1007/s40615-018-0493-y

52   Thomas, Online exogamy reconsidered.

53   Zhao, S., Grasmuck, S., & Martin, J. (2008). Identity construction on Facebook: Digital empowerment in anchored relationships. *Computers in Human Behavior*, *24*(5), 1816-1836. doi:10.1016/j. chb.2008.02.012

54   Duguay, Dressing up Tinderella.

55   Alhabash, S., Hales, K., Baek, J. H., & Oh, H. J. (2014). Effects of race, visual anonymity, and social category salience on online dating outcomes. *Computers in Human Behavior*, *35*, 22-32. doi:10.1016/j. chb.2014.02.016; Fiore, A. T., & Donath, J. S. (2005, April). Homophily in online dating: When do you like someone like yourself? In *CHI'05 Extended Abstracts on Human Factors in Computing Systems*, pp. 1371-1374. ACM. doi:10.1145/1056808.1056919; Rudder, Race and attraction.

56   Lundquist, J. H., & Lin, K. H. (2015). Is love (color) blind? The economy of race among gay and straight daters. *Social Forces*, *93*(4), 1423-1449. doi:10.1093/sf/sov008

repercussions for rejecting peers might lead users to rely more intensively on racial prejudices than they would in an offline setting.[57]

Previous research on dating platforms for homosexuals highlighted the role of racial preferences in the choice of a partner. Based on a sample of minority users, Han and Choi[58] found that participants experienced alienation and exclusion especially in connection with seeing their ethnicity explicitly filtered out from other users' profiles (e.g. 'no fats, no femmes, no Asians'[59]). Respondents from this study also hinted at an existing 'hierarchy of desire', where whiteness represents the aesthetic canon, as well as the top of the hierarchy ('You know, some do say "no whites" but it's very rare compared to other ethnicities. You almost never fail to be a Caucasian.'[60]). Several other qualitative studies have focused on the blending of dating choices and sexual racism.[61] Robinson[62] argued that what users perceive as sexual preferences might rather be interpreted as a form of everyday racism. Using a grounded theory-based analysis of interviews, as well as content analysis on user profiles from a dating platform for homosexuals, the researcher found that respondents actively use race as a filter for potential partners in the same way they would employ location or age as a discriminant. While geographical and age-related stereotypes indeed exist, Robinson argues that what makes race-based selection problematic is the fact that the exclusion, or the fetishization, of certain users '…is not independent of the larger structures that stereotype non-white sexuality as abnormal'.[63]

Such structures are, obviously, commonplace also outside the gay community. Yet, broader studies on the role of race in personal preferences within heterosexual, as well as other LGBTQ online dating platforms, are scarce. An earlier study on a mostly heterosexual dating platform highlighted how, while only a minority of users revealed their racial preferences in exclusive terms, discrimination against individuals of other ethnicities was a rather common phenomenon for all users.[64] That research found that *all* minorities were less likely to receive first contacts than Caucasian users,[65] which is coherent with other studies dedicated to heteronormative Internet platforms.[66]

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57   Robinson, B. A. (2015). 'Personal preference' as the new racism: Gay desire and racial cleansing in cyberspace. *Sociology of Race and Ethnicity*, *1*(2), 317-330. doi:10.1177/2332649214546870

58   Han & Choi, Very few people say 'no whites'.

59   Han & Choi, Very few people say 'no whites', p. 150.

60   Han & Choi, Very few people say 'no whites', p. 152.

61   Callander et al., Is sexual racism really racism?; Miller, B. (2015). 'Dude, where's your face?' Self-presentation, self-description, and partner preferences on a social networking application for men who have sex with men: A content analysis. *Sexuality & Culture*, *19*(4), 637-658. doi:10.1007/s12119-015-9283-4; Rafalow, M. H., Feliciano, C., & Robnett, B. (2017). Racialized femininity and masculinity in the preferences of online same-sex daters. *Social Currents*, *4*(4), 306-321. doi:10.1177/2329496516686621

62   Robinson, 'Personal preference'.

63   Robinson, 'Personal preference', p. 326.

64   Hitsch et al., Matching and sorting in online dating.

65   Hitsch et al., Matching and sorting in online dating.

66   Feliciano et al., Gendered racial exclusion; Rudder, Race and attraction.

On dating apps, where self-presentation is minimal and mostly visual, researchers have highlighted how the highly game-like choice of other users, by means of swiping left or right, might have favored processes of objectification as well as self-objectification.[67] In this context, race becomes another objectified attribute,[68] and emerges as an element of bi-directional choice. On the one hand, the ethnicity of users is evaluated as a factor when swiping left or right; on the other, users employ the ethnicity of others, e.g. in the form of pictures with children from a different race, as a representational tool on the dating market.[69] This highlights a rather complex role for race on online dating platforms, which might reflect, at least to a certain extent, the complex relationships of representation and power as they take place both on the Internet and offline. In the next section, some suggestions will be made around how future research could help better understand such important dynamics.

Conclusion

From the overview of the existing literature about the role of race in online dating, a complex picture emerges. Dating platforms appear to have the potential to provide a less racially segregated space in comparison with many of the traditional offline dating locations (Thomas, 2018). A respectable body of research indicates that couples who first met online are more likely to cross racial (and other demographic) boundaries (Dutton et al, 2009; Lee, 2015; Thomas, 2018). At the same time, most online dating users keep showing strong preferences for peers who share their racial background.[70] Additionally, the ease of communication with complete strangers, coupled with the pseudo-anonymity of dating platforms, created an environment of lower social punishment, which might serve as incentive to displaying discriminatory as well as openly racist behavior.[71]

Warranting theory, i.e. the idea that the online environment might instinctively press people to put more trust in information they perceive to be unalterable[72] can be helpful to gain a better understanding of the role of users' racial identities on dating platforms. Given the predominantly visual nature of dating websites and apps, in fact, especially the physical racial features of users might emerge as having high warranting value, and therefore actively contribute to the choice, or rejection, of a potential partner. This could be particularly true considering the reduced cues based on which partner choice decisions are made online.[73] As studies on this topic are, to this day, substantially lacking, future research should be dedicated to comparing the role of race in online versus offline dating.

67 Strubel, J., & Petrie, T. A. (2017). Love me Tinder: Body image and psychosocial functioning among men and women. *Body Image*, *21*, 34-38. doi:10.1016/j.bodyim.2017.02.006

68 Mason, C. L. (2016). Tinder and humanitarian hook-ups: The erotics of social media racism. *Feminist Media Studies*, *16*(5), 822-837. doi:10.1080/14680777.2015.1137339

69 Mason, Tinder and humanitarian hook-ups.

70 Potârcă, G., & Mills, M. (2015). Racial preferences in online dating across European countries. *European Sociological Review*, *31*(3), 326-341. doi:10.1093/esr/jcu093; Rudder, Race and attraction.

71 Han & Choi, Very few people say 'no whites'; Lundquist & Lin, Is love (color) blind?

72 Walther et al., Self-generated versus other-generated statements.

73 Ellison et al., Profile as promise.

A separate reflection concerns the role of platform design. Dating apps have been accused of promoting the quick exchange of partners, seeing all of them as easily replaceable and promoting flimsy and short-term relationships.[74] At the same time, the scarce available options to filter out users have also been hypothesized to serve as incentive to users who wish to connect and meet people from outside their circles, which could increase their chances of picking a dating partner from a different ethnic background.[75] While existing research seems to support the idea that users' priorities, needs and desires might drive their choices more than the platform they use,[76] more research is necessary to understand if, and to what level, platform design influences user behavior. More research is also necessary to understand if platforms can really offer a non-racially segregated space, and what could be the consequences for society offline.

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74   Hobbs et al., Liquid love?
75   Hobbs et al., Liquid love?; Thomas, Online exogamy reconsidered.
76   Duguay, Dressing up Tinderella; Hobbs et al., Liquid love?; Ranzini & Lutz, Love at first swipe?; Rudder, Race and attraction.

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14: MISSED CONNECTIONS OR MISINTERPRETED INTENTIONS? THE GENRE AND VIOLENCE OF DIGITAL LOVE STORIES

BRITTANY KNUTSON

Missed Connections was developed by Jim Buckmaster in September of 2000 as a corner of Craigslist, a community site that advertises things that are lost, for sale, and sought. The Missed Connections portion of the site, however, has a unique purpose: it provides a medium for lovestruck people to connect with 'someone who got away'.[1] Although this approach to finding love may sound fruitless, 'ads fill the site's pages, reading read like odes to hope or snippets from dime-store romance novels… based on encounters in bars or restaurants, supermarkets or hardware stores, trains or buses, gyms or health clubs. Even moments when two people stop at a red light.'[2] Skepticism about Missed Connections is abundant, but social scientists and others who study how people interact online agree that Missed Connections offer unique insight into the notion that a passing moment can lead to lifelong love.[3] It is almost as though a connection would have to be 'meant to be' for the post to work because 'so many tricky factors are at play in this forum… You must have an encounter with a stranger that's distinctive enough to recognize in the dozens of daily posts. Your alluring stranger also needs to be scrolling through the site — and then they need to have the guts or interest to respond.'[4]

Missed Connections tells an interesting story about romance and pursuit. This story complicates the boundaries between the real and the virtual, lust and love, but maintains one major boundary: the distinction between male and female desire. This distinction emerges in the demographics of Missed Connection posters: men post ninety percent of Missed Connections, while only ten percent are posted by women.[5] However, Ilia Blinderman,[6] a journalist who studied 10,000 Missed Connection posts, offers another explanation of the gendered breakdown of posts. She explains that 'while women… detect flirtation with relative accuracy, men tended to label all interactions with women as, "She wants me".'[7] The difference between men and women's interpretations of the moment of initial attraction is

1   Mejia, P. (2017, September 3). Meet the people still meeting on Craigslist Missed Connections. *The Daily Beast.* Retrieved from https://www.thedailybeast.com/meet-the-people-still-meeting-on-craigslist-missed-connections.

2   Sheingold, D. (2017, November 30). Sex, love, danger: Missed Connections offers a long shot at love online. *The Record.* Retrieved from http://www.northjersey.com/story/news/watchdog/2017/11/30/missed-connections-still-offers-long-shots-love-but-there-risks/908659001/.

3   Blinderman, I. (2016, April 11). I analyzed 10,000 Craigslist Missed Connections. Here's what I learned. *Vox.* Retrieved from https://www.vox.com/a/craigslist-missed-connections/i-analyzed-10-000-craigslist-missed-connections-here-s-what-i-learned.

4   Mejia, Meet the people.

5   Sheingold, Sex, love, danger.

6   Blinderman, I analyzed 10,000 Craigslist Missed Connections.

7   Blinderman, I analyzed 10,000 Craigslist Missed Connections.

important in understanding the frequency of men's Missed Connection posts and the content therein.

I argue that the appeal of Craigslist Missed Connections is that the website offers a chance at a real life romance narrative – a storyline of serendipitous, instant connection between two people who are meant to be together, a possibility that appears strikingly similar to a text or film that could be categorized in the romance genre. I suggest that, if read as narratives about attraction and desire, Missed Connections tell stories about real-life romantic encounters, stories that reveal the potential, power dynamics, and violence of romance. I contend that Missed Connections belongs to the romance genre which is far from innocuous as it leaves the subject of romantic interest vulnerable to objectification through a misinterpretation of their intentions. To support this argument, I will first outline the literature that specifies what it means to identify Missed Connection narratives within the romance genre, then explain my method and analyze a small sample of Missed Connections, before finally laying out the implications for these short digital love stories.

The Violent Romance Genre

Scholars committed to drawing a connection between romantic texts and violence account for the ways in which this connection could impact real world romance. Radway[8] warns that 'romance's treatment of rape [and violence] probably harms romance readers… [it may] give her a false sense of security by showing her how to rationalize violent behavior.'[9] Not only are scholars worried that violence in romantic texts may convince women to put up with violence in romantic relationships, but also that the violence in romantic texts may be 'a subtle form of collusion between the male author and male leadership'.[10] Although romance novels are primarily written by women, many romantic comedies are produced by men and many romantic scripts must be approved by men in leadership positions before they reach the public. I do not mean to imply that men produce violent romantic texts to normalize relationship violence. I only mean to suggest that the violence within our communities and the violence detailed in our cultural stories may not be as disconnected as we imagine it to be. Katie Rogers of *The New York Times* thinks through the relationship between our cultural stories and systemic violence, questioning, 'What did we collectively learn from Harvey Weinstein, the producer who chose which movies we saw? … How much did the abuse of women – often younger, subordinate or not famous – by powerful male journalists factor into the stories they told us?'[11] Because the romance genre can be seen in Craigslist Missed Connections posts, I contend that it is important to read them with these questions in mind. Here, I take on Gravdal's task in her literary criticism of representations of rape in medieval romance and read Missed Connection posts 'not to elucidate the author's intended meaning

8   Radway, J. (1984). *Reading the romance: Women, patriarchy, and popular literature.* Chapel Hill, NC: University of North Carolina Press.

9   Radway, *Reading the romance*, p. 216.

10   Radway, *Reading the romance*, p. 38.

11   Rogers, K. (2017, November 30). When our trusted storytellers are also the abusers. *The New York Times.* Retrieved from https://www.nytimes.com/2017/11/30/us/politics/sexual-harassment-media-politics-lauer.html.

but rather to seek out a "violent" reading precisely at the point where romance appears to mystify its violence'.[12] In order to read these texts violently, I will explain the plot of a typical romantic text and highlight the points that, if closely examined, illuminate the previously mystified violence.

The points of the romance plot are crucial to the success of the narrative. Radway notes that, when talking to readers, 'women placed heavy emphasis on the importance of development in the romance's portrayal of love.'[13] I argue that the same basic plot successfully emphasizes romantic development across mediums and time. The plot of medieval romance literature is characterized by the hero's suffering 'physically from lovesickness, wounding, or other corporeal dysfunction',[14] 'an allied claim that the fetishized, desired, and beautiful body of the lady alone holds the power to fulfill the lover's wish and heal his ailments',[15] and an elaborate courting ritual that unites the hero and heroine in true love.[16] The plot of contemporary romantic texts progresses in similar ways. Radway describes the romance literary genre: 'Generally there are two people who come together for one reason or another, grow to love each other and work together solving problems along the way — united for a purpose. They are light easy reading and always have a happy ending which makes one feel more light-hearted.'[17] In a move that is, perhaps, more specific than Radway's, Gill and Herdieckerhoff[18] articulate the plot of post-feminist romance narratives, 'a young, inexperienced, "ordinary" woman meets a handsome, wealthy man… The hero is mocking, cynical, contemptuous, hostile and even brutal, and the heroine is confused. By the end he reveals his love for her, and misunderstandings are cleared away.'[19] Throughout the scholarship that examines the romance genre, three general plot points stand out as integral: the romantic encounter, the obstacle, and the reconnection. I will identify these in the Missed Connections posts that I analyzed and draw conclusions based on how each component plays out in the short, digital narratives.

Conducting the Study

The plotline of Missed Connections looks different than that of romance novels because the characters in Missed Connections do not have extensive contact with one another. Thus, the obstacle is the failed connection at the time of the initial encounter. Additionally, in Missed Connections, the reconnection tends to happen because of the pursuer's seemingly fruitless attempt to contact the pursued, an action that can often be interpreted as the hero showing his

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12   Gravdal, K. (1992). Chrétien de Troyes, Gratian, and the medieval romance of sexual violence. *Signs, 17*(3), 558-585. doi:10.1086/494749, p. 570.

13   Radway, *Reading the romance*, p. 65.

14   Burns, E. J. (2001). Courtly love: Who needs it? Recent feminist work in the medieval French tradition. *Signs, 27*(1), 23-57. doi:10.1086/495669, p. 33.

15   Burns, Courtly love, p. 33.

16   Burns, Courtly love, p. 33.

17   Radway, *Reading the romance*, p. 65.

18   Gill, R., and Herdieckerhoff, E. (2006). Rewriting the romance: New femininities in Chick Lit? *Feminist Media Studies, 6*(4), 487-504. doi:10.1080/14680770600989947

19   Gill & Herdieckerhoff, Rewriting the romance, p. 490.

tender side to the heroine because his desire to reconnect is so strong. Despite the differences, my analysis of Missed Connection posts revealed that they can be interpreted as variations on the romance genre. I discovered this by examining 165 posts over a one-week span (November 23, 2017-December 1, 2017) that operated in the way that Missed Connections were intended to operate – as a means reconnecting after an initial encounter in which at least one individual felt attracted to another. Then, I identified sensitizing concepts to aid in my analysis. Sarah J. Tracy[20] defines sensitizing concepts as 'theories or interpretive devices that serve as jumping-off points or lenses for qualitative study. These concepts – gleaned from experience, past research or mentioned in former scholarship – serve as background ideas that offer frameworks through which researchers see, organize, and experience the research problem.'[21] The sensitizing concepts that I selected come from the plot points that I identified as crucial to the romance genre in my review of the literature about romantic texts: the romantic encounter, the obstacle, and the reconnection.

Analysis

Not all the Missed Connection posts that I encountered resembled the romance genre. However, those that did not adhere to the genre were dissimilar because the intention or the subjects differed from the traditional Missed Connection post. For example, some posts reference a love that was lost after a significant relationship. These posts operate very differently than a true Missed Connection. My analysis was also limited by my interest in examining the impact of the romance genre on the production of Missed Connections. Although some posters attempt to reconnect with someone of their same gender, the traditionally heteronormative structure of romance narratives made those Missed Connections less significant for my study. Despite the posts that did not conform to the romance genre, the similarities between the romance genre and traditional Missed Connection posts were undeniable.

THE ROMANTIC ENCOUNTER

The initial romantic encounter is a crucial part of any romantic storyline, but it has importance for Missed Connections narratives. These romantic tales can only reference this initial encounter because no connection beyond that encounter was ever made. The significance of the initial encounter is evidenced by strong descriptions of the encounter.

Missed Connection narrators use detailed descriptions to articulate the moment of attraction. These moments are described quite differently depending on the poster's gender. Posts by women seem to describe the situation, rather than the other party. For example, one woman writes, 'We spoke at the bar and I asked if you were placed/planted there to say

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20   Tracy, S. J. (2013). *Qualitative research methods: Collecting evidence, crafting analysis, communicating impact.* Hoboken, NJ: Blackwell Publishing.
21   Tracy, *Qualitative research methods*, p. 28.

things. We laughed and then I had to go.'[22] Another writes, 'We met last Friday at Best Buy in the laptop area. The guy was explaining to [sic] differences between the mac air and mac pro. I was curious [sic] so I listened in too and the guy thought we were together.'[23] Women who post provide situational details hoping that they will spark recognition and, potentially, reconnection.

The situational descriptions offered by women are a stark contrast to the aesthetic descriptions posted by men. For example, a man posts, 'You're the pretty Asian girl, about mid to late 20s, 5'4', petite little body, with long black hair.'[24] Another reads, 'I saw you walking out of Walmart with a 2-3-year-old black baby, you are white, straight hair, light brownish hair, light tan, shorts, glasses, your kinda short, but super cute!'.[25] My analysis of the posts suggests that men perceive the physical features of the person they are pursuing as most important detail, while women perceive the situation as the most important.

Taylor[26] explains that the descriptions of moments of attraction in fictional romance break along gender lines and are important because they illuminate 'the dominant understandings of how gender should be performed within a given society, and what is therefore considered desirable'.[27] The descriptions of romantic encounters that we find in mediated romantic narratives are concerned with the women's beauty in a way that appears like the descriptions offered by men in their posts. Duggar[28] notes the physical qualities of romantic heroines: 'patient, quiet, shy, beautiful, unique, kind, generous, thin, organized, well-kept, virginal, and most of all, inexplicably captivating'.[29] Radway[30] writes that 'the ideal romantic heroine is considered by everyone else, including the hero, to be an extraordinary example of full-blooming womanhood… It is her beauty that undoes the ideal heroine because it is always the cause of the hero's inability to master his desire for her once she is near him.'[31] The heroine's beauty is extraordinary and powerful, inspiring the hero to do anything to be with her. Similarly, in men's Missed Connection posts, the woman's beauty captures the narrative and inspires the poster's pursuit.

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22   Bar fun — w4m. (2017, December 1). *Craigslist.* Retrieved from https://minneapolis.craigslist.org/wsh/mis/d/bar-fun-w4m/6407987550.html.

23   Missed Connection at Best Buy — w4m. (2017, November 30). *Craigslist.* Retrieved from https://minneapolis.craigslist.org/dak/mis/d/best-buy-m4m/6413003409.html.

24   Petite Asian UPS Girl — m4w. (2017, December 1). *Craigslist.* Retrieved from https://minneapolis.craigslist.org/ram/mis/d/petite-asian-ups-girl-m4w/6408818051.html.

25   You drive a Ford Fusion (grey) — m4w (Blaine/Walmart). (2017, November 27). *Craigslist.* Retrieved from https://minneapolis.craigslist.org/ank/mis/d/you-drive-ford-fusion-grey-m4w/6386475353.html.

26   Taylor, J. (2014). Romance and the female gaze obscuring gendered violence in the Twilight saga. *Feminist Media Studies, 14*(3), 388-402. doi:10.1080/14680777.2012.740493

27   Taylor, Romance and the female gaze, p. 398.

28   Duggar, J. M. 'I'm a feminist, but…' Popular romance in the women's literature classroom. *Journal of Popular Romance Studies, 4*(2), 1-19. Retrieved from http://jprstudies.org/wp-content/uploads/2014/10/IAFB_Dugger.pdf.

29   Duggar, 'I'm a feminist, but…', p. 9.

30   Radway, *Reading the romance*.

31   Radway, *Reading the romance*, p. 126-127.

THE OBSTACLE

The obstacle for those posting Missed Connections is simple: there was a romantic connection that was not acted upon. A problem arises in the narration of this obstacle, however, because the person being posted about may not have experienced a reciprocal romantic connection. It is impossible to know how many posts identify a reciprocated connection, but it seems likely that some posters misinterpreted the situation. Some seemed to interpret shared interests and actions as fate. For example, 'We exchanged glances…but a lot of them. We even pumped ketchup at the same time as well…'.[32] Others felt that they could determine the interest of the woman that they were attracted to on the basis of the woman's appearance: 'the way you move that petite little body tells me you want to get handled by this package',[33] and 'You looked like a very sexy blonde looking for some attention at Super America.'[34] Even when women asserted that they were disinterested, men seemed to assume different intentions. For example, one poster writes '[I] asked if you'd like to get together. I sensed something in your hesitation responding. It was just a wee bit too long, to say you were married. On the off chance my hunch was correct… I'm game.'[35] The assertion of intentions by men in these encounters suggests that they believe that an obstacle can be overcome, even if the woman is uninterested.

THE RECONNECTION

Nearly all the posts in my sample acknowledge the unlikelihood of a reconnection sparked by a Missed Connections post. If thought of in terms of the romance genre, however, the possibility of reconnection is framed as entirely possible. Radway[36] suggests that a separation is necessary as the plot needs an obstacle to overcome, but the reconnection, in traditional romance narratives, is seemingly inevitable.[37] The posts prescribe the appropriate ways for the addressee to attempt reconnection and, in some cases, what that reconnection would look like.

Those who post in Missed Connections lay out how they would like the person they are pursuing to approach a possible reconnection. Most expect that the pursued will see the post and respond over email. Many posters request a detail about the initial encounter as proof of the responder's identity. Some ask for a specific details—'tell me what color boots, color of my inner shirt, or that of my jacket, I had on this morning',[38] 'If you can tell me what we talked

32 Mac's Fish and Chips.

33 Petite Asian UPS Girl.

34 Downtown Super America – Red Coat – m4w. (2017, November 28). *Craigslist.* Retrieved from https://minneapolis.craigslist.org/hnp/mis/d/downtown-super-america-red/6404946197.html.

35 Early Thurs. eve, Richfield Aldi on Penn Ave. – w4m. (2017, November 30). *Craigslist.* Retrieved from https://minneapolis.craigslist.org/hnp/mis/d/early-thurs-eve-richfield/6407549078.html.

36 Radway, *Reading the romance.*

37 Radway, *Reading the romance*, p. 148.

38 Petite Asian UPS Girl.

about, I'll know it's you!',[39] 'Tell me what color your coat is and describe me so I know it's you'[40] — while others' requests seem more vague — 'Tell me something very distinguishable about me so I know it's you!'.[41] The need for verification before reconnection may seem unique to Missed Connections. However, verification also appears in the romance genre as the means to overcome romantic separation. This verification generally happens when 'the hero demonstrates miraculously that he can be tender with the heroine'.[42] Verification is an important component of reconnection in the romance genre.

In addition to their request for the pursued to verify their identity, some posters illustrated what the reconnection would look like. The process of writing out the potential for reconnection seemed to be a way for the poster to communicate their intentions. Some expressed interest in getting to know the person they were posting about, writing, 'Guessing you won't see this but I would love to know your story if possible'[43] and 'I'd love the chance to get to sit down and chat over dinner and get to know each other.'[44] Others expressed more sexual intentions: 'I played the game well before I got the band on my finger. But for you, I am willing to come out of an early retirement',[45] 'I know you're married but if you weren't I'd SO love the opportunity to share a night (or more) with you!',[46] and 'We need to go somewhere private for a few hours!'.[47] It is noteworthy that all the posts that illustrated the scene of reconnection were written by men pursuing women. This is not coincidental. In fact, it fits snuggly within the romance genre that men, when declaring their interest in women, intentional maintain their control of the situation.[48] The men pursuing women on Craigslist maintain their control through their descriptions of the requirements and possibilities of reconnection.

Conclusion

It would not be reasonable to suggest that the men who posted in Missed Connections intentionally wrote within the romance genre. Whether they intended or not, their writing bears similarities to popular narratives about love and to familiar stories we tell about our own encounters with love.

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39   To the cute blonde cosmetologist waiting for her bus — m4w (Penn and 494 Bus Stop). (2017, December 1). *Craigslist*. Retrieved from https://minneapolis.craigslist.org/wsh/mis/d/to-the-cute-blonde-cosmetologist-waiting-for-her-bus-m4w/6407988415369.html.

40   Co-op salad bar run-in — w4m (Minneapolis). (2017, December 1). *Craigslist*. Retrieved from https://minneapolis.craigslist.org/hnp/mis/d/co-op-salad-bar-run-in-w4m/6407549345.html.

41   Kwik Trip — m4w (Hudson). (2017, November 27). *Craigslist*. Retrieved from https://minneapolis.craigslist.org/hnp/mis/d/kwik-trip-m4w/6407549178.html.

42   Radway, *Reading the romance*, p. 148.

43   Stunning blonde placing order for 2 at SmashBurger — m4w (Shakopee). (2017, November 30). *Craigslist*. Retrieved from https://minneapolis.craigslist.org/hnp/mis/d/stunning-blonde-placing-order-for/6407549567.html.

44   Kwik Trip.

45   Petite Asian UPS Girl.

46   Front desk clerk at hotel... Tammy — m4w (Hastings). (2017, November 30). *Craigslist*. Retrieved from https://minneapolis.craigslist.org/hnp/mis/d/front-desk-clerk-at-hotel-tammy-m4w/6407549065.html.

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48   Radway, *Reading the romance*, p. 148.

The connection between real life pursuit and the #MeToo movement is made clear in the posts that I analyzed. Many of the narrators seem concerned with coming across as too aggressive. They read: 'If you see this and feel the same way, please respond or find another way to let me know. I want to avoid any unwelcome advances on my part',[49] 'I haven't said anything yet because it is your workplace and I don't want to make you feel weird since I always come in',[50] 'I thought about introducing myself but in today's culture who knows how that could be taken. Didn't want to be THAT guy.'[51] The acknowledgement that pursuit could be perceived as aggressive suggests that within these stories, and in the moments of initial attraction that look like them, romantic encounters carry the potential for violence. The similarities between traditional romance narratives and these digital romance narratives suggest that, perhaps, this potential for violence does not lurk in bad people but is the result of bad plotlines and the actions that they inform in real life romantic encounters.

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BIOGRAPHIES

2: The Myth of the Siren's Song: Gendered Courtship and Sexual Scripts in Online Dating

Julie M. Albright is a digital sociologist who has spent her career exploring the digital transformation of society. She is a Lecturer at the Viterbi School of Engineering and the Applied Psychology Department at the University of Southern California and is on the Board of Directors of Infrastructure Masons. She has appeared as an expert on many national television programs including the Today Show, CNN, NBC Nightly News, Nat Geo, CBS, and NPR. She has also been quoted in The Wall Street Journal, the New York Times, Time Magazine and Newsweek and many others. Her new book explores how digital natives are "untethering" from traditional social structures and processes, while hyper-attaching to their devices and social media; called Left to Their Own Devices: How Digital Natives Are Reshaping the American Dream, published by Prometheus Books, and distributed by Penguin Random House.

Steve Carter was a founding member of the team that developed eHarmony from research hypothesis to enterprise. Eventually taking on the role of Chief Scientist at eHarmony, Dr. Carter led the world-class team of data scientists and engineers responsible for the development, testing, implementation, validation and ongoing improvement of the algorithms and technology which power the eHarmony service. Prior to joining eHarmony, Dr. Carter conducted research on life-span development and complex problem solving at the University of Southern California, where he received his Ph.D. in psychology. Dr. Carter is a native of Northern California, received his BA in psychology from the University of California, Santa Cruz, and currently resides in Pasadena with his lovely wife, two sons, two dogs and two cats. They are all surprisingly compatible and enjoy the good life.

3: Gender Differences in Online Dating Experiences

Milena Ribeiro Lopes, a PhD candidate at Trinity College Dublin, is a researcher in the field of Human Computer Interaction (HCI), more specifically in mobile application development. Through her work she brings together gender issues, interaction design tools and the design process in order to improve gender inclusiveness and representativeness in the production of technology. In her most recent studies she introduces a method to identify gender bias in design and discusses the adoption of gender-neutral tools in order to foster gender equity in mobile application development.

Carl Vogel, a Fellow of Trinity College Dublin, is Associate Professor in Computational Linguistics and Director of the Centre for Computing and Language Studies at Trinity College Dublin, the University of Dublin. His work in computational linguistics has yielded advances in cognitive science, forensic linguistics and stylistics. Frequently, this work is informed by Internet accessed data, and, accordingly, he dwells on the accompanying research methodology issues. Recently, with Claire Hewson and Dianna Laurent, he co-authored the second edition of the book, Internet Research Methods, published by SAGE.

4: Stereotypical Gender Attributions Across Sexual Orientations on Tinder: Evidence from Turkey

Amir Hetsroni is a professor in the Department of Media and Visual Arts at Koç University in Turkey. He is the author/editor of four books and nearly 100 journal articles and book chapters. He is also a media celebrity in his home country, Israel, where he takes part in reality shows as a consultant and commentator, and takes an active role in anti-censorship campaigns. He failed to find love in online dating, but did not lose hope.

Meriç Tuncez, a PhD candidate in Design, Technology, Society program at Koç University, received his BA in Business Administration from Koç University, and received his M.F.A. in Media and Design from Bilkent University. His research interests span interactions with artificial intelligence and virtual assistants including humanness, mental state, emotion, intention, sociality and morality attributions to artificial intelligence, and online dating. He is also a digital artist and his digital works were included in a recent interdisciplinary exhibition about coincidences called *Yaratan Disiplinler: Tesadüfler* by Tasarım Atölyesi Kadıköy (TAK).

Mina Özdemir was born in 1997. She recently finished her BA in the department of Media and Visual Arts at Koç University in Istanbul, where she was a member of the prestigious Rector's list and Dean's list. Her research and professional interests include cross-cultural marketing and advertising.

5: Mirror Mirror On The Wall, Which Dating App Affords Them All?: Exploring Dating Applications Affordances and User Motivations

Leah E. LeFebvre (Ph.D., University of Texas at Austin) is an Assistant Professor in the Department of Communication Studies at the University of Alabama. Her research focuses on communicative intersections on romantic relationships and emerging technology. Specifically, she explores the proliferation of online, recordable technologies that influence past, current, and future communication, relationship processes, and memory. Her scholarship has been published in *Journal of Social and Personal Relationships, Social Media+Society, Mobile Media & Communication, Personal Relationships, Communication Monographs, Health Communication, Imagination, Cognition and Personality, Journal of Language and Social Psychology,* and *Cyberpsychology, Behavior, and Social Networking.*

Xiaoti Fan (MA, University of Arkansas) is a doctoral student in the College of Communication & Information Sciences at the University of Alabama. Her research focuses on interpersonal communication, with a particular focus on deception. Recently, she has presented at the Southern States Communication Association Conference where she received a Top Student Paper recognition.

6: The Social Exchange Framework and Dime Dating

Arrington Stoll holds a Ph.D. in Communication from the University of Wisconsin, Milwaukee. She has over eight years of teaching experience and is currently a professor at Central Washington University in the Communication Department.

7: The Relationship between Romantic Ideals and Online Dating Stigmatization

Elisabeth Timmermans is currently a postdoctoral researcher at Erasmus University Rotterdam (Department of Media & Communication) in the Netherlands. Her research mainly focuses on users' motives for and experiences with using mobile dating apps.

Cédric Courtois is currently an assistant professor at the KU Leuven (School for Mass Communication Research) in Belgium. His research mainly focuses on the structural and agentic properties of (social) media-related audience practices and their consequences in a variety of contexts e.g. the workplace, intimate relations, and civic engagement/and or participation.

8: Justifications for "Ghosting Out" of Developing or Ongoing Romantic Relationships: Anxieties Regarding Digitally-Mediated Romantic Interaction

Jimmie Manning (PhD, University of Kansas) is Chair and Professor of Communication Studies at the University of Nevada. His research focuses on meaning-making in relationships. This research spans multiple contexts to understand how individuals, couples, families, organizations, and other cultural institutions attempt to define, support, control, limit, encourage, or otherwise negotiate relationships. He explores these ideas through three contexts: relational discourses, especially those about sexuality, gender, love, and identity; connections between relationships and efficacy in health and organizational contexts; and digitally mediated communication. His research has been supported by funding agencies such as the National Science Foundation and he has accrued over 70 publications in outlets including *Communication Monographs*, *Journal of Social & Personal Relationships*, and *Journal of Computer-Mediated Communication*. He recently coauthored the book *Researching Interpersonal Relationships: Qualitative Methods, Research, and Analysis* (Sage Publications). Awards include the National Communication Association Kibler Award and the International Association for Relationship Research Teaching Award.

Katherine J. Denker (PhD, University of Missouri) is Associate Professor and Director of Graduate Studies for Communication Studies at Ball State University. Her research and teaching stem from the areas of interpersonal and instructional communication, with a focus around issues of power. Her work examines themes ranging from work-life balance to innovative uses of technology in the classroom. She has published in many reputable outlets including *Journal of Family Communication*, *Computers in Human Behavior*, and *Women & Language*. Awards include the Outstanding Feminist Teacher-Mentor Award from the Organization for the Study of Communication, Language and Gender as well as the

Outstanding Service Award from the Central States Communication Association.

Rebecca Johnson (MA, Northern Illinois University) is a doctoral student and graduate teaching assistant in the Department of Communication Studies at the University of Kansas. Her research focuses on computer-mediated communication and relationships, with much of her work focusing on technology use in long-distance relationships. Her co-authored book chapter on discussing gender and sexuality in the classroom recently received the Scholar Award for Best Book Chapter from the Sexual Orientation and Gender Identity Caucus of the Central States Communication Association. She also received the Outstanding Service Award from that organization.

9: "I❤U": A Semiotic Analysis of Romantic Relationship Bitmojis on Social Media

Abdulgaffar Olawale Arikewuyo is at the concluding stage of his PhD programme at Eastern Mediterranean University, Northern Cyprus and a lecturer at the Department of Mass Communication, University of Ilorin, Nigeria. His research combines aspects of Communication Psychology, Interpersonal Communication, Romantic Relationships, Sexual Communication and Gratification, and Family Relations and focuses on communication patterns individuals in intimate (sexual and romantic) relationships. He also examines the impact of communication apparatus such as mainstream and social media on human relationships, with emphases on how social media platforms facilitate satisfaction and dissatisfaction in romantic relationships.

Bahire Efe Özad is a Professor at the Faculty of Communication and Media Studies of Eastern Mediterranean University, Northern Cyprus. She holds a PhD in Education from the University of Manchester. Currently she teaches Research Methods for Social Sciences and English for Mass Communication. Her research interests are educational technology, media literacy, culture, particularly the gypsy culture in Cyprus.

Aminat Sheriff Owolabi holds a BSc and MSc in Mass Communication from Al-Hikmah University and University of Ilorin, both in Nigeria. Amina currently teaches at the department of Mass Communication, Al-Hikmah University. She has to her credit publications that span through local, national and international journals. Her research interest is anchored on the portrayal of gender in the mass media, particularly in advertising and in public relations campaigns and in developmental communication in Africa.

10: Verifying Identities: The Role of Third-party Reputation Information in Online Dating

Lara Hallam works as a teaching and research assistant at the Department of Communication Studies of the University of Antwerp, Belgium. As a doctoral student she is a member of the MIOS research group. Her research focusses on relationships that develop in online dating on the one hand, and on how online dating platforms can be enhanced to improve the initial interactions between potential romantic partners on the other hand.

Charlotte De Backer is Assistant Professor at the University of Antwerp (Belgium), Department of Communication Studies. She teaches and conducts research in the domain of interpersonal relations. In her PhD (Ghent University) and postdoctoral research (UC Santa Barbara) she studied the various functions of interpersonal and celebrity gossip. One of the current topics of her research focuses on the sharing of reputation information by means of gossip on the perceived levels of trust in interpersonal relations.

Sara Pabian (Ph.D.) is a postdoc researcher at the Department of Communication Studies, research group MIOS (Media, ICT, and Interpersonal Relations in Organisations and Society) at the University of Antwerp (Belgium). The focus of her research is on cyberbullying during adolescence. She investigates different roles (bully, victim and/or bystander) and links them (longitudinally) to aspects of the social and cognitive development of the adolescent.

Michel Walrave is a Professor at the Department of Communication Studies, University of Antwerp (Belgium). He is responsible for the research group MIOS. His research is centred around online self-disclosure and privacy. He investigates adolescents' and adults' online disclosure of personal information to other individuals or companies, and related opportunities and risks.

11: From Swiping to Ghosting: Conceptualizing Rejection in Mobile Dating

Chad Van De Wiele is a PhD student and NSF-IGERT Fellow in the Department of Communication at the University of Illinois at Chicago. Chad employs a variety of methodological and theoretical approaches to study social networks; specifically, his research focuses on political discourse, affect, visuality, and representations and reproductions of race, class, gender, and sexuality within networked spaces. Chad has presented his work at various academic conferences, including NCA, ICA, and AoIR, and has published work in proceedings of the International Joint Conference on Pervasive and Ubiquitous Computing and Social Media + Society.

Jamie Foster Campbell is a researcher and third-year Ph.D. student at the University of Illinois at Chicago. Her work focuses on interpersonal communication and technology use. Specifically, she explores how technology is more than merely a tool used for communication. She believes that technology becomes woven into our close relationships and has a direct impact on relational development and maintenance. Jamie holds a B.A. from the University of San Francisco and an M.A. from San Francisco State University in Communication Studies. Her Master's thesis titled *Digital Communication in Romantic Relationship Development Over Time: A Dialectical Dilemma* investigated how technology is reshaping romantic partners' interactions and how they manage dialectical tensions throughout their relational history. Jamie has presented her work in conferences organized by the National Communication Association, the International Communication Association, the Association of Internet Researchers, and the Western States Communication Association.

12: A Match Made in the Cloud: Jews, Rabbis, and Online Dating Sites

Yoel Cohen is Associate Professor in The School of Communication, Ariel University, Israel (School Chairman 2009-2011). His book publications include *God, Jews & the Media: Religion in Israel's media*; *Spiritual News: Reporting Religion around the World; The Whistleblower of Dimona: Vanunu, Israel & the Bomb;* and *Media Diplomacy: the Foreign Office in the mass communications age.* He completed his doctorate at City University London in Political Sociology. His research interests include religion news; religion and media in Judaism; foreign correspondents; and nuclear policy and media. His research has been published in various journals and books including *Harvard International Journal of Press/Politics, Gazette, Asian Communication Research, Journal of Media & Religion, Israel Affairs, Review of International Studies, The Journal of Arab & Muslim Media Research, The International Encyclopedia of Communication Theory and Philosophy, The International Encyclopedia of Media Effects,* and *The Encyclopedia of Religion, Communication & Media.* He was editor of the section on Israel Media in *Encyclopedia Judaica.* He is vice-chair of the Religion & Communication working group of the International Association for Media and Communication Research (IAMCR).

Ruth Tsuria, Assistant Professor at Seton Hall University College of Communication and the Arts, has earned her Ph.D. from Texas A&M University Department of Communication. Her research, which investigates the intersection of digital media, religion, and feminism, has been published in various academic outlets, such as *The Communication Review*, *Journal of Media and Religion*, and *Social Media + Society*. She won the Emerging Scholar Award in *Religion in Society*. Her work has been supported by various bodies, including Women and Gender Studies Program at Texas A&M University. She is currently working on her first book *Holy Women, Pious Sex, Sanctified Internet: Exploring Jewish Online Discourse on Gender and Sexuality*.

13: Crossing Boundaries? Online Platforms and Interracial Romance

Giulia Ranzini is an Assistant Professor of Communication Science at the Vrije Universiteit Amsterdam. She obtained her Ph.D. from the University of St Gallen (2014). Her research focuses on information disclosure, privacy and relationship formation online.

14: Missed Connections or Misinterpreted Intentions?: The Genre and Violence of Digital Love Stories

Brittany Knutson is a doctoral student in the Department of Communication Studies at the University of Minnesota—Twin Cities. Her research focuses on the rhetorical form and function of testimony. Currently, she is working on a project that examines the institutional capture of victim testimony in cases of gender and sexual violence. She hopes to contribute generative theoretical interventions that will enable institutions to better listen to and care for testifying victims.

It Happened on Tinder: Reflections and Studies on Internet-Infused Dating

This volume brings together articles from different parts of the globe that describe, question, test and criticize innovations and recent developments in online dating. Using quantitative as well as qualitative techniques the studies included in the book examine the impact of gender, personality traits, app interface and design, and culture on success and failure in online courtship. Among the issues dealt here are ghosting, sex emoticons, body presentation in the virtual universe, dime dating, religious courtship and more.

Amir Hetsroni is a professor in the Department of Media and Visual Arts at Koç University in Turkey. He is the author/editor of four books and nearly 100 journal articles and book chapters. He is also a media celebrity in his home country, Israel, where he takes part in reality shows as a consultant and commentator, and takes an active role in anti-censorship campaigns. He failed to find love in online dating, but did not lose hope.

Meriç Tuncez, a PhD candidate in Design, Technology, Society program at Koç University, received his BA in Business Administration from Koç University, and received his M.F.A. in Media and Design from Bilkent University. His research interests span interactions with artificial intelligence and virtual assistants including humanness, mental state, emotion, intention, sociality and morality attributions to artificial intelligence, and online dating. He is also a digital artist and his artworks were included in a recent interdisciplinary exhibition about coincidences called Yaratan Disiplinler: Tesadüfler by Tasarım Atölyesi Kadıköy (TAK) in Istanbul. His first real love was exclusively on the net but later he realized that he was being catfished by that person for the duration of a year.

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network cultures