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Social-Psychological Aspects of Privacy and Self-Disclosure on the Hinge Dating App Profile

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## **Abstract**

Mobile dating applications or “apps,” which require users to self-disclose personal information to large and unknown audiences, complicate Irwin Altman's foundational definition of privacy as an interpersonal boundary regulation process. Despite the clear privacy risks of disclosing, dating apps like Hinge are rapidly growing in a social world transformed by COVID-19. In the absence of strong audience cues and privacy-preserving features, the information users decide to share about themselves plays a crucial role in negotiating interpersonal boundary regulation within the context of a dating app profile. Although users maintain some agency over the information they make accessible, these decisions can be impacted by social-psychological heuristics that exert influence over what and how much information users decide to self-disclose. This study considers how Hinge users’ self-disclosures are influenced by the technological artifact they interface with and the social environment they engage within. Leveraging Robert Cialdini’s conceptualizations of persuasion and social norms, the researcher conducted a multi-method study to investigate how Hinge’s sociotechnical context can influence self-disclosure. The findings from the app walkthrough study reveal that Hinge’s marketing and design leverages persuasion tactics that can impact the quantity and quality of self-disclosure. The findings from the surveys and interviews show that users build their profiles in the face of various social norms that can also affect the quantity and quality of self-disclosure.

## Table of Contents

<b>Introduction</b>	1
<b>Research Questions</b>	3
Significance	3
Why Hinge?	4
<b>Section I: Literature Review</b>	5
Situating Privacy & Self-Disclosure	5
Overview of Dating Apps	6
Privacy Risks on Dating Apps	7
Negotiating Privacy Risks	8
Social Factors of Privacy & Self-Disclosure	10
Technical Aspects of Privacy & Self-Disclosure	12
<b>Section II: Methods</b>	13
Theoretical Framework	13
The Sociotechnical Perspective	13
Principles of Persuasion	13
Focus Theory of Norms	14
Research Design	15
Walkthrough Study	15
Surveys	16
Interviews	17
<b>Section III: Hinge’s Technical Context</b>	19
Section III Overview	19
Hinge’s Marketing and Privacy Policy	19
Marketing Materials	19
Privacy Policy	21
Hinge’s Interface & Design	22
Three Categories of Disclosure	22
Dark Patterns and Nudging	23
Disclosing ‘Personality’	28
Section III Discussion	29

<b>Section IV: Hinge’s Social Context</b>	30
Section IV Overview	30
General Survey Findings	31
Perceptions of Hinge and its Users	32
Perceptions of Hinge Profiles as Private vs. Public	33
Perceived Privacy Risks	35
Disclosure of Biographical Information	36
Social Norms of Self-Disclosure on Hinge	37
Norms Around the Quantity of Self-Disclosure	38
Norms Around the Quality of Self-Disclosure	41
Section IV Discussion	47
<b>Section V: Conclusion</b>	48
<b>Appendix</b>	50
<b>Bibliography</b>	53

## Introduction

Privacy is often conceptualized as the ability to control whom we provide personal information to and when, but mobile dating applications have complicated this sense of agency. To initiate interpersonal relationships with others, dating app users must self-disclose details about themselves onto a profile that disseminates among an imagined and unknown audience.<sup>1</sup> Self-disclosing is fundamental to participation, necessary to accrue the social and psychological benefits of online dating. Previous studies also suggest that self-disclosure not only necessary, but also advantageous. It can have positive psychological effects, stimulating positive emotions, higher self-esteem, and well-being, and improving life satisfaction.<sup>2</sup> Furthermore, self-disclosing can help users meet various needs and desires, ranging from social inclusion and approval, casual sex, and romantic relationships.<sup>3</sup> However, users who disclose are exposed to a multitude of social and institutional privacy risks. Through photos and text, users reveal their identifiable information like name, age, and face, more abstract psychographic information like interests and hobbies, and potentially even sensitive information like religion and sexual preferences.<sup>4</sup> Dating app users may be especially vulnerable compared to traditional SNS users who are equipped with more privacy preserving features that enable greater control over their audience and anonymity.

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<sup>1</sup> Jeremy Birnholtz, Colin Fitzpatrick, Mark Handel, and Jed R. Brubaker, "Identity, Identification and Identifiability: The Language of Self-Presentation on a Location-Based Mobile Dating App." Proceedings of the 16th international conference on Human-computer interaction with mobile devices & services (September, 2014): 3-4. <https://doi.org/10.1145/2628363.2628406>.

<sup>2</sup> Mufan Luo and Jeffrey T. Hancock, "Self-disclosure and social media: motivations, mechanisms and psychological well-being," *Current Opinion in Psychology* 31 (2020): 110. <https://doi.org/10.1016/j.copsyc.2019.08.019>.

<sup>3</sup> Sindy R. Sumpter, Laura Vandenbosch, and Loes Ligtenberg, "Love me Tinder: Untangling emerging adults' motivations for using the dating application Tinder," *Telematics and informatics* 34, no. 1 (2017): 67. <https://doi.org/10.1016/j.tele.2016.04.009>.

<sup>4</sup> Colin Fitzpatrick, Jeremy Birnholtz, and Jed Brubaker, "Social and personal disclosure in a location-based real time dating app." In *2015 48th Hawaii International Conference on System Sciences*, (2015): 1983. <https://doi.org/10.1109/HICSS.2015.237>.

Despite the risks, the dating app ecosystem is a rapidly growing; new users constantly join, and existing users update their profiles with new disclosures. As each new user creates a profile and self-discloses, they add to a growing information ecosystem where data is predisposed to misuse by a few "Big Dating" behemoths and any participant with access. Not only do corporations benefit from this type of data collection at the expense of individual privacy, but bad actors and everyday users can weaponize personal information and leak it into external social networks.<sup>5</sup> Whether personal information is sold by corporations to third parties, or screenshot and shared with friends, dating app users must share personal information that becomes uncontrollably circulated.<sup>6</sup>

Rapid dating app adoption, however, suggests a widespread willingness to self-disclose in this risky context. In a Digital Age with access to smartphones and broadband connection, Statista estimates that there are over 25 million smartphone dating app users in the United States as of 2022.<sup>7</sup> This adoption is troubling from a privacy perspective. Narrow interpretations of privacy would conclude that these millions of participants widely sharing personal information do not care about privacy, but this perspective ignores a nuanced understanding of privacy as dynamic, contextual, and part of a networked ecology.<sup>8</sup> This perspective also assumes that users have total control over what they choose to share, ignoring how users could be pushed into self-disclosing through socio-psychological mechanisms they might not even be aware of. Since online dating is as much a technologically mediated process as it is a social and psychological

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<sup>5</sup> Camille Cobb. "User-to-User Privacy in Social and Communications Applications" (PhD diss., University of Washington, 2019), 2.

<sup>6</sup> Ibid.

<sup>7</sup> "Number of smartphone dating app users in the United States from 2019 to 2023," Statista, last modified April 28, 2022, <https://www.statista.com/statistics/274144/smartphone-dating-app-users-usa/#:~:text=In%202020%2C%20there%20were%20an,followed%20by%20POF%20and%20Bumble.>

<sup>8</sup> Natalya N. Bazarova and Philipp K. Masur, "Towards and integration of individualistic, networked, and institutional approaches to online disclosure and privacy in a networked ecology," *Current Opinion in Psychology* 30 (2020): 118-119. <https://doi.org/10.1016/j.copsyc.2020.05.004>.

process, it is necessary to study self-disclosure as situated within a sociotechnical system where the technological artifact (design, business model, vision, promotional materials) and the social environment (social norms) work together to influence behaviors. This study seeks to investigate how privacy and self-disclosure is configured by both the technical affordances and social norms.

### **Research Questions**

This study aims to answer the following question: How does Hinge's sociotechnical environment (design and norms) influence how users negotiate self-disclosure on their profiles? This question was derived from the researcher's firsthand observations of rapid Hinge adoption in New York City and an intellectual interest in applying a sociotechnical lens to privacy and self-disclosure.

### **Significance**

Maintaining control over what personal information we choose to share is a pressing social issue complicated by social networking. Many researchers across domains and disciplines have studied the intersection of privacy and social networking, but the literature lacks an application of social-psychological theories of persuasion and social influence to privacy and self-disclosure, which challenges the idea that users have total cognitive control over what they choose to share. Multiple security studies have explored the use of persuasion and social influence in the context of socially engineered and targeted attacks like phishing and romance scamming, but they have yet to be applied to the self-disclosure decisions of everyday users in less malicious contexts like dating apps – a context that still extracts personal information but in more subtle and 'benevolent' ways. Understanding how users can be influenced into self-disclosing, in ways that benefit the company and themselves, in a more everyday environment

can inform better and less extractive design, policy, and marketing. It can also contribute to our understanding of why so many users are willing to self-disclose such rich personal information in the online dating context, which is ripe with privacy dangers.

### Why Hinge?

The Hinge dating app is a unique space that successfully encourages widespread self-disclosure through lengthy profiles that combine text and visuals. By tailoring to relationship-seekers, Hinge disrupts the perception that dating technologies are only effective at serving casual sex needs. This direction has been particularly advantageous in the wake of the COVID-19 pandemic that discouraged casual encounters.<sup>9</sup> Hinge further differentiates itself from its competitors by de-emphasizing physical appearance and encouraging users to show off their personalities through text prompts, making it an interesting case study of a dating app that facilitates self-disclosure by appealing to users' identities.

Furthermore, privacy and self-disclosure research focused on dating apps is growing but sparse, and there is currently no literature that solely investigates the Hinge dating app. As the third most downloaded dating app in the US, Hinge has massive potential to disrupt online dating and, more broadly, how we form romantic relationships.<sup>10</sup> Hinge is a valuable case study to study privacy and self-disclosure in the online dating context not only because of its success but also because of its lengthy profile structure that allows users to divulge a lot of personal information onto their profiles. In focusing on Hinge, this project does not intend to generalize all dating apps; the goal is to deeply investigate a specific dating app context.

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<sup>9</sup> Stefanie Duguay, Christopher Dietzel, and David Myles, "The year of the "virtual date": Reimagining dating app affordances during the COVID-19 pandemic," *New Media & Society*, (2022): 1, <https://doi.org/10.1177/14614448211072257>.

<sup>10</sup> "Most popular dating apps in the U.S. 2022, by number of downloads," Statista, last modified July 13, 2022, <https://www.statista.com/statistics/1238390/most-popular-dating-apps-us-by-number-of-downloads/>.



## Section I: Literature Review

### Situating Privacy & Self-Disclosure

There is no consensus on how privacy should be defined, but contemporary privacy discourse incorporates the dynamic and social nature of online environments. Social psychologist Irwin Altman's conceptualization of privacy is foundational to contemporary privacy discourse, suggesting that individuals have the right to control how they self-disclose, which can be defined as the amount of information we voluntarily transmit about ourselves to others.<sup>11</sup> Altman also suggests that privacy is not an absolute concept, but rather a relative one that can vary depending on the context and the individuals involved.<sup>12</sup> In Altman's view, privacy is a boundary regulation process that becomes a balancing act with self-disclosure.<sup>13</sup> Since the self has become networked in the Digital Age, navigating privacy becomes a deeply contextual process of deciding what personal information to self-disclose within the specific bounds and expectations of the online environment the individual is engaged in.<sup>14</sup> Marwick & Boyd's model of networked privacy encapsulates this dynamic process, suggesting that users must adapt their self-disclosures to shifting and overlapping contexts to navigate ever-changing social norms, multiple audiences, and varying technological architectures.<sup>15</sup>

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<sup>11</sup> Stephen T. Margulis, "On the Status and Contribution of Westin's and Altman's Theories of Privacy," *Journal of Social Issues* 59, no. 2 (2003): 416-419. [https://doi.org/10.1007/978-3-642-21521-6\\_1](https://doi.org/10.1007/978-3-642-21521-6_1).

<sup>12</sup> Ibid.

<sup>13</sup> Valerian J. Derlega and Alan L. Chikin, "Privacy and self-disclosure in social relationships." *Journal of social issues* 33, no. 3 (1977): 103. <https://doi.org/10.1111/j.1540-4560.1977.tb01885.x>.

<sup>14</sup> Alice E. Marwick and danah boyd. "Networked privacy: How teenagers negotiate context in social media." *New media & society* 16, no. 7 (2014): 1052. <https://doi.org/10.1177/1461444814543995>.

<sup>15</sup> Alice E. Marwick, and danah boyd. "I tweet honestly, I tweet passionately: Twitter users, context collapse, and the imagined audience." *New media & society* 13, no. 1 (2011): 115, <https://doi.org/10.1177/1461444810365313>.

## Overview of Dating Apps

The US dating app ecosystem is as large as it is varied. Tinder, the most popular app, attracts millions of users worldwide and across all races and ethnicities. Bumble, the second most popular app, is also global but designed around female empowerment.<sup>16</sup> Other smaller, more niche apps curate to specific socially organizing categories like sexual orientation, religion, and ethnicity. While each app is uniquely designed, the standard model is a profile-based system that allows users to create and curate their disclosures to position themselves as an attractive match. Almost anyone with an internet connection and smartphone can create a profile, but they must disclose some Personally Identifiable Information to set up an account and to be able to fully participate, they must also disclose their geographic location to the app and its users.<sup>17</sup>

Dating app profiles are essential component of online dating as they serve as a gateway into a potential romantic relationship.<sup>18</sup> Profiles are portfolios of the self that consist of a mix of textual descriptions and photos, often curated to appear desirable. Online daters may also feel pressured into presenting themselves accurately should the users try to verify the identity they put forth.<sup>19</sup> Once a profile is created, users open their profiles to other users in a quasi-public way.<sup>20</sup> Since they are shown publicly to all other users that meet individually set parameters like geolocation, gender preference, and age, the audience is unknown and difficult if not impossible to control. Users have even less control since profiles are further disseminated to other users through the app's algorithm. To work around the opacity of algorithmic systems, users have

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<sup>16</sup> Sobieraj and Humphreys, "Forced Empowerment", 1.

<sup>17</sup> Jody Farnden, Ben Martini, and Kim-Kwang Raymond Choo. "Privacy risks in mobile dating apps." *In Proceedings of 21st Americas Conference on Information Systems* (2015): 1, <https://doi.org/10.48550/arXiv.1505.0296>.

<sup>18</sup> Nicole B. Ellison, Jeffrey T. Hancock, and Catalina L. Toma. "Profile as promise: A framework for conceptualizing veracity in online dating self-presentations." *New media & society* 14, no. 1 (2012): 46, <https://doi.org/10.1177/146144481141039>.

<sup>19</sup> Ibid.

<sup>20</sup> Birnholtz, Fitzpatrick, Handel, and Brubaker, "Identity, Identification and Identifiability," 5.

come up with folk theories to make sense of the process. According to Huang et al., many dating app users conceptualize the system using a marketplace metaphor, in which users go shopping for matches, or a game metaphor, in which users must use their profiles to capture the attention of others.<sup>21</sup>

### Privacy Risks on Dating Apps

By creating a dating app profile, thereby opening their personal information to others, users become vulnerable to social and institutional privacy risks. Institutional privacy risks include data sharing with third parties/government agencies, data tracking, and data analysis. But in a social networking system where profiles are visible to anyone whose profile meets the user's preferences, any user can become an adversary at any time – Cobb re-conceptualizes this unique privacy situation as “user-to-user privacy” or “U2U.”<sup>22</sup> These risks include scamming, catfishing, identity theft, cyberbullying, and cyberstalking. Data leakage by other users is a risk that has also garnered attention in popular media, specifically due to the ability to share screenshots of dating app profiles online. A notable example of leakage occurred during the 2016 Rio Olympics when a Tinder user shared photos of athletes' dating profiles, which were picked up by major news outlets.<sup>23</sup> At the same time, a Daily Beast journalist collected information from Grindr on closeted gay Olympians whose participation in the app raised risks of being publicly outed.<sup>24</sup> In addition to sharing profiles, messaging exchanges can also leak into other online networks, evidenced by the public Instagram account Tinder Nightmares. By documenting sexist and misogynistic messages men make to women, Tinder Nightmares facilitates crowdsourced

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<sup>21</sup> Sabrina Angela Huang, Jeffrey Hancock, and Stephanie Tom Tong. "Folk Theories of Online Dating: Exploring People's Beliefs About the Online Dating Process and Online Dating Algorithms." *Social Media+ Society* 8, no. 2 (2022): 2, <https://doi.org/10.1177/20563051221089>.

<sup>22</sup> Camille Cobb, “User-to-User Privacy,” 1-2.

<sup>23</sup> Camille Cobb, “User-to-User Privacy,” 15.

<sup>24</sup> Ibid.

screenshotting on a large scale, exemplifying the conflation of dating apps with common social networking platforms.<sup>25</sup> The account also provides a glimpse into the widespread harassment and casual misogyny women experience when using dating apps.<sup>26</sup>

Contrary to face-to-face environments where the audience is clear, maintaining control over who sees what personal information is difficult in social networking spaces like dating apps. Social networking collapses multiple audiences into a single context, resulting in what Marwick and boyd have coined as context collapse.<sup>27</sup> By blurring the line between the public and the private, users often self-disclose to entire networks rather than a select few trusted associates. This blurring may stir concern over unintended individuals, or contexts, viewing profiles and accidentally sharing content, which Johnson, Egelman, and Bellovin call "insider threat" in their study of Facebook users.<sup>28</sup> Users must then weigh the potential negative implications of collapse with the benefits of self-disclosure, and deal with the negative consequences if collapse leads to a privacy violation. Preventing context collapse can be even more complicated when using multiple social networking platforms, since each online context cues a different audience – the audience of Facebook messages, for example, is much different from a public Tweet and a LinkedIn post.<sup>29</sup>

### Negotiating Privacy Risks

Self-disclosing in collapsed online contexts has led users to develop strategies to negotiate their privacy. Community guidelines exist to curb malicious actors, but social

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<sup>25</sup> Aaron Hess and Carlos Flores, "Simply more than swiping left: A critical analysis of toxic masculine performances on Tinder Nightmares." *New Media & Society* 20, no. 3 (2018): 1086-1087.

<sup>26</sup> Ibid.

<sup>27</sup> Marwick and boyd, "I tweet honestly," 122.

<sup>28</sup> Maritza Johnson, Serge Egelman, and Steven M. Bellovin. "Facebook and privacy: it's complicated." In *Proceedings of the eighth symposium on usable privacy and security*, (2012): 6, <https://doi.org/10.1145/2335356.2335369>.

<sup>29</sup> Marwick and boyd, "I tweet honestly," 122.

networking sites continue to be plagued with privacy risks. With a lack of privacy settings to control their audiences, users have developed strategies to reduce uncertainty and protect themselves from the bad actors they could encounter.<sup>30</sup> One documented strategy, specifically within the online dating context, is searching for more information about other users online through search engines like Google. This behavior allows users to verify a profile by seeking more information.<sup>31</sup> Research on online youth violence has illustrated how teenagers protect their privacy online by using false names, posting anonymous messages, and assuming someone else's identity.<sup>32</sup> Another studied strategy among teenage Facebook users is social steganography, a strategic method of writing that hides the true meaning of a message that can only be understood by some – much like a note written with invisible ink.<sup>33</sup> However, these visibility strategies are not always possible or desirable, and may only benefit certain individuals in some online contexts.

Tufekci's research on audience and disclosure regulation among college-aged Facebook and Myspace users investigates the self-disclosure strategy of restricting the information within the profile. Her research finds that users actively manage the boundary between public and private but do not restrict the information on their profiles.<sup>34</sup> Instead, they adjust their profile visibility and use nicknames to manage unwanted privacy consequences.<sup>35</sup> Dating app users, however, may not be afforded these same visibility and anonymity strategies. In contrast to

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<sup>30</sup> Jennifer L. Gibbs, Nicole B. Ellison, and Chih-Hui Lai, "First comes love, then comes Google: An investigation of uncertainty reduction strategies and self-disclosure in online dating." *Communication Research* 38, no. 1 (2011): 72-73.

<sup>31</sup> Gibbs, Ellison, and Lai, "First comes love," 81.

<sup>32</sup> Desmond Upton Patton et al., "Social media as a vector for youth violence: A review of the literature." *Computers in Human Behavior* 35 (2014): 550.

<sup>33</sup> Marwick and boyd, "Networked privacy," 1058.

<sup>34</sup> Zeynep Tufekci. "Can you see me now? Audience and disclosure regulation in online social network sites." *Bulletin of Science, Technology & Society* 28, no. 1 (2008): 20, <https://doi.org/10.1177/0270467607311484>.

<sup>35</sup> Tufekci, "Can you see me now," 31.

Tufekci's findings, Cobb's more recent study finds that Tinder users take action to prevent undesirable privacy consequences through selective self-disclosure within their profiles.<sup>36</sup> It is important to explore the dating app context as unique compared to traditional SNS. Within the dating app context, users are pressured to share accurate information, making strategies like false names or social steganography inappropriate or undesirable. Furthermore, dating app users are unable to control and predict the behavior of other users, which adds pressure to what they choose to self-disclose.<sup>37</sup>

### Social Factors of Privacy and Self-Disclosure

The social nature of online environments is a powerful determinant of self-disclosure behaviors. Social norms provide guideposts that are collectively understood by a group and can influence social behavior without legal force.<sup>38</sup> In their study on privacy behaviors in SNS, Spottswood and Hancock find that explicit cues to social norms can influence disclosure frequency and how strictly people configure their privacy settings.<sup>39</sup> These norms may have potent effects on SNS where the behaviors of other users can be clearly observed and replicated. Privacy social norms may also develop when users see and consequently incorporate the privacy behaviors of their friends and others into their own decisions – an idea consistent with Altman's conceptualization of privacy as socially and culturally influenced.<sup>40</sup> Uski and Lampinen's qualitative study of Finnish Facebook and Last.fm users shows that users follow various social

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<sup>36</sup> Cobb, "User-to-User Privacy," 31.

<sup>37</sup> Cobb, "User-to-User Privacy," 41.

<sup>38</sup> Philipp K. Masur, Dominic DiFranzo, and Natalie N. Bazarova. "Behavioral contagion on social media: Effects of social norms, design interventions, and critical media literacy on self-disclosure," *Plos one* 16, no. 7 (2021): 2. <https://doi.org/10.1371/journal.pone.0254670>.

<sup>39</sup> Erin L. Spottswood, and Jeffrey T. Hancock. "The positivity bias and prosocial deception on Facebook." *Computers in Human Behavior* 65 (2016): 258-259, <https://doi.org/10.1111/jcc4.12182>.

<sup>40</sup> Lili Nemeč Zlatolas, Tatjana Welzer, Marjan Heričko, and Marko Hölbl. "Privacy antecedents for SNS self-disclosure: The case of Facebook." *Computers in Human Behavior* 45 (2015): 162. <https://doi.org/10.1016/j.chb.2014.12.012>.

norms that guide profile sharing behavior, including rules around “being real” and “not faking.”<sup>41</sup> Their study illustrates how norms are unique to the specific SNS environment and lead users to sanction one another should they behave in ways that go against the norms.<sup>42</sup>

Nissenbaum's theory of privacy as contextual integrity suggests that norms of information flow and appropriateness govern all areas of life; a privacy violation occurs when contextual norms are breached.<sup>43</sup> Individuals perpetually navigate different social contexts, like going to the doctor's office, school, and church; each context has a distinct set of norms that influence self-disclosure requiring individuals to navigate and adapt constantly. For example, within the context of friendship – which contains parallels with dating – friends have agency over what they self-disclose to each other but are bound by certain obligations.<sup>44</sup> Friendship carries confidentiality norms, as friends do not expect others to gossip about their personal information. Another example lies within the context of health services. If a gay man may disclose his HIV-positive status to his doctor, and the doctor decides to tell his wife later that day, the information flows into a different context with different expectations, violating the norms of the initial context.<sup>45</sup> It is thus important to examine how each environment, whether online or offline, has its own unique social context and norms.

Willingness to self-disclose may also depend on the recipient; Olson, Grudin, and Horvitz suggest that the users create categories about the information items they disclose and whom they wish to share their information with.<sup>46</sup> Furthermore, self-disclosure also be dependent on the

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<sup>41</sup> Suvi Uski and Airi Lampinen, “Social norms and self-presentation on social network sites: Profile work inaction,” *new media & society* 18 no. 3 (2016): 161, <https://doi.org/10.1177/1461444814543164>.

<sup>42</sup> Ibid.

<sup>43</sup> Helen Nissenbaum, “Privacy as contextual integrity.” *Wash. L. Rev.* 79 (2004): 119.

<sup>44</sup> Ibid.

<sup>45</sup> Marwick and boyd, “Networked privacy,” 1054.

<sup>46</sup> Judith S. Olson, Jonathan Grudin, and Eric Horvitz. “A study of preferences for sharing and privacy.” In *CHI'05 extended abstracts on Human factors in computing systems*, (2005): 1985-1988.

mode of interaction. Jiang, Bazarova, and Hancock find that reciprocity norms within computer-mediated communication can facilitate more intimate disclosures because people perceive online interactions as more intimate than face-to-face interactions.<sup>47</sup>

### Technical Factors of Privacy and Self-Disclosure

An app's design is essential in guiding users' privacy and disclosure behaviors by establishing norms of its own. For example, the 'feminist' dating app Bumble tries to shift gendered norms of heterosexual communication by only allowing women to message first.<sup>48</sup> However, not all design decisions carry good intentions and can manipulate users into self-disclosing personal information. Dark patterns are term used to describe interfaces that exploit decision-making heuristics and cognitive biases by taking advantage of how humans process information.<sup>49</sup> Privacy-specific dark patterns facilitate the revealing of privacy-sensitive data, with designers applying strategies like hiding and obfuscation that may manifest as confusing default settings or forced registration.<sup>50</sup>

Legal scholar Ari Waldman suggests that dark patterns highlight powerful social cues to share in ways that conceal the dangers of disclosing – an example is Facebook's News Feed, in which every post shows the user which of their friends has 'liked' the comment.<sup>51</sup> While this design element may seem ubiquitous, it could cause users to engage in posts they otherwise might not have by manipulating user trust and psychology.<sup>52</sup> Dark patterns pose interesting social

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<sup>47</sup> L. Crystal Jiang, Natalya N. Bazarova, and Jeffrey T. Hancock. "From perception to behavior: Disclosure reciprocity and the intensification of intimacy in computer-mediated communication." *Communication Research* 40, no. 1 (2013): 136-138, <https://doi.org/10.1177/0093650211405313>.

<sup>48</sup> Sabrina Sobieraj and Lee Humphreys. "Forced Empowerment and the Paradox of Mobile Dating Apps." *Social Media+ Society* 7, no. 4 (2021): 1, <https://doi.org/10.1177/20563051211068>.

<sup>49</sup> Christoph Bösch et al., "Tales from the Dark Side: Privacy Dark Strategies and Privacy Dark Patterns." *Proc. Priv. Enhancing Technol.* 2016, no. 4 (2016): 237, <https://doi.org/10.1515/popets-2016-0038>.

<sup>50</sup> Bösch et al., "Tales from the Dark Side," 249.

<sup>51</sup> Ari Ezra Waldman, "Cognitive biases, dark patterns, and the 'privacy paradox'." *Current opinion in psychology* 31 (2020): 107, <https://doi.org/10.1016/j.copsyc.2019.08.025>.

<sup>52</sup> Ibid.



science questions around rationality, and much literature suggests that humans are unable to make entirely rational self-disclosure decisions online.<sup>53</sup>

## **Section II: Methods**

### Theoretical Framework

#### *The Sociotechnical Perspective*

This research project is rooted in a sociotechnical perspective, which assumes that the social and technological mutually shape one another. The sociotechnical perspective acknowledges that the features of any technological object or system and the social norms, rules of use, and participation are interdependent and inextricably linked.<sup>54</sup> This perspective creates an entry point to explore privacy and self-disclosure behaviors as shaped by social-psychological forces within both the technical and social context of Hinge. A sociotechnical approach is especially valuable for this research project as it acknowledges that “humans have agency but technology matters.”<sup>55</sup>

#### *Principles of Persuasion*

Perhaps most central to the app walkthrough is Robert Cialdini's six principles of persuasion (Figure 1) presented in the book *Influence: The Psychology of Persuasion*, which was initially developed within the field of marketing to understand how buyers are influenced to purchase goods they might not even like or need.<sup>56</sup> Cialdini's principles of persuasion can be a useful framework to understand how individuals might be influenced to self-disclose personal

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<sup>53</sup> Waldman, "Cognitive biases," 105.

<sup>54</sup> Nicole B. Ellison, Cassidy Pyle, and Jessica Vitak, "Scholarship on well-being and social media: A sociotechnical perspective." *Current Opinion in Psychology* (2022): 2.

<sup>55</sup> Ibid.

<sup>56</sup> Ferreira et al., "Principles of persuasion," 36.

information on their dating app profiles. According to Cialdini, six universal principles or tactics can be leveraged as "weapons of influence" to persuade individuals to comply with requests.<sup>57</sup> These principles are effective because people rely on them as mental shortcuts to avoid careful and deliberative thinking.<sup>58</sup> Cialdini's persuasion principles have been applied beyond the marketing field in various studies that explore technical and social aspects of security to understand why cyberattacks are successful at harvesting personal information from victims. The app walkthrough applies persuasion in a similar way to understand why the design of the Hinge dating app successfully leads users into self-disclosing personal information, framing "individuals" as Hinge dating app users and "compliance with requests" as self-disclosure.

#### **FIGURE 1: CIALDINI'S 6 PRINCIPLES OF PERSUASION**

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<b>Reciprocity</b>	We comply because we should repay others for what they give us.
<b>Commitment</b>	We feel inclined to behave in ways consistent with the position we initially take.
<b>Social Proof</b>	We comply because when we observe other people engaging in it, we view the behavior as correct.
<b>Liking</b>	We comply with the requests of those we know and like.
<b>Scarcity</b>	We perceive opportunities as more valuable to us when they are less available.
<b>Authority</b>	We are more likely to comply when the person making the request has power over us.

#### *Focus Theory of Norms*

Social norms are implicit rules guide everyday behavior, including online behaviors.

Social psychology research on naturally emerging contextual social rules is a long-standing

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<sup>57</sup> Nicole L. Muscanell, Rosanna E. Guadagno, and Shannon Murphy. "Weapons of influence misused: A social influence analysis of why people fall prey to internet scams." *Social and Personality Psychology Compass* 8, no. 7 (2014): 388-389.

<sup>58</sup> Ibid.

practice and has been applied to various SNS contexts from Facebook to online dating. In his conceptualization of the focus theory of norms, Cialdini et al. describes the difference between injunctive and descriptive social norms, both of which can be used to explain behavior, but are conceptually different constructs.<sup>59</sup> Injunctive social norms indicate what is considered normative appropriate behavior within a specific context.<sup>60</sup> These norms indicate the behaviors that are either approved or disapproved by the group, which motivate actions through the anticipation of social rewards or punishment. Descriptive social norms, on the other hand, indicate common behavior or what most others do.<sup>61</sup> The survey and interview components leverage the conceptualization of injunctive norms, drawing upon the lived experiences of users to investigate Hinge's social environment for the various social norms that may impact what users think they ought to self-disclose on their profiles.

### Research Design

This IRB-approved research combined multiple methods: (1) app walkthrough, (2) multiple choice and open-ended survey, and (3) semi-structured interviews with a subset of survey respondents. A mixed-methods approach allowed the researcher to explore Hinge's social and technical context while applying methods that centered the user's experience.

#### *Walkthrough Study*

The walkthrough method allowed the researcher to explore Hinge's technical context through acquiring a holistic understanding of the app and the company. The researcher first examined the Hinge's marketing and auxiliary materials (company website, social media

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<sup>59</sup> Robert B. Cialdini, Carl A. Kallgren, and Raymond R. Reno. "A focus theory of normative conduct: A theoretical refinement and reevaluation of the role of norms in human behavior." In *Advances in experimental social psychology*, vol. 24, pp. 203. Academic Press, 1991.

<sup>60</sup> Ibid.

<sup>61</sup> Ibid.

accounts, and privacy policy) to understand the company's vision, values, and governance. Following these observations, the researcher engaged with the app's interface, which required downloading the Hinge app on a mobile device (the most current version as of July 2022), exploring the interface, and recording each step through written notes on the various screens, features, and flows. This step allowed the researcher to interrogate the technological architecture in ways that everyday users might overlook.<sup>62</sup>

### *Surveys*

The survey contained ten demographic, 20 multiple-choice, and 15 open-ended questions propagated through snowball sampling across the researcher's university networks. The survey sample represented a predominantly heterosexual and college-educated group, aligning with Hinge's primary demographic (Figure 2). Through multiple-choice and open-ended questions, the survey asked users about their perceptions of their social environment and more specifically about their profile self-disclosure decisions.

**FIGURE 2: SURVEY RESPONDENTS (N=75)**

<b>Gender</b>	<b>N</b>	<b>Percentage of Total</b>
Male	30	40%
Female	45	60%
<b>Age</b>	<b>N</b>	<b>Percentage of Total</b>
18-22	4	5.33%
23-27	67	89.33%
28-32	3	4%

<sup>62</sup> Ben Light, Jean Burgess, and Stefanie Duguay. "The walkthrough method: An approach to the study of apps." *New media & society* 20, no. 3 (2018): 887.

38-42	1	1.33%
<hr/>		
<b>Sexuality</b>	<b>N</b>	<b>Percentage of Total</b>
<hr/>		
Heterosexual	66	88%
Bisexual	7	9.33%
Homosexual	1	1.33%
Other (Asexual)	1	1.33%
<hr/>		
<b>Race/Ethnicity</b>	<b>N</b>	<b>Percentage of Total</b>
<hr/>		
White or Caucasian	45	60%
Asian	19	25.33%
Hispanic	4	5.33%
Black	1	1.33%
Mixed Race/Ethnicity (2 or more)	6	8%
<hr/>		
<b>Education</b>	<b>N</b>	<b>Percentage of Total</b>
<hr/>		
College or more	72	96%
Still in College	1	1.33%
Associates Degree	1	1.33%
High School or GED	1	1.33%

### *Interviews*

The researcher conducted ten semi-structured interviews randomly selected from survey respondents. The interview sample closely reflects the survey demographic (Figure 3).

Participants were asked deeper questions about their profile self-disclosure decisions and the social factors that affect their decision-making processes. Interviews added anecdotal evidence that built off the survey findings. Upon completion of the interviews, the researcher conducted an

analysis of the survey and interview data, drawing from Uski and Lampinen’s approach to examining qualitative data for social norms that govern self- disclosure.<sup>63</sup>

**FIGURE 3: INTERVIEW RESPONDENTS (N=10)**

<b>Gender</b>	<b>N</b>	<b>Percentage of Total</b>
Male	5	50%
Female	5	50%
<b>Age</b>	<b>N</b>	<b>Percentage of Total</b>
23-27	10	100%
<b>Sexuality</b>	<b>N</b>	<b>Percentage of Total</b>
Heterosexual	8	80%
Bisexual	2	20%
<b>Race</b>	<b>N</b>	<b>Percentage of Total</b>
White or Caucasian	4	60%
Asian	2	20%
Hispanic	2	20%
Mixed Race (2 or more)	2	20%
<b>Education</b>	<b>N</b>	<b>Percentage of Total</b>
College or more	10	100%

<sup>63</sup> Uski and Lampinen, “Social norms and self-presentation on social network sites, 47-464.

### **Section III: Walkthrough Study Findings – Hinge’s Technical Context**

#### Section III Overview

Section III presents findings from the app walkthrough study, which included (1) an examination of Hinge's marketing materials, including its website, social media accounts, and related news articles, and (2) an interrogation of the interface during the profile creation process. The examination of marketing materials revealed insights into Hinge’s brand image and business model, while the interrogation of the interface allowed the researcher to scrutinize the Hinge app through a lens of persuasion and examine affordances that emerge from the interplay between the design features and their perception. This section unpacks how Hinge, as a company and as a product, can influence the frequency and types of information users self-disclose on their profiles.

#### Hinge’s Marketing Materials and Privacy Policy

##### *Marketing Materials*

Hinge’s marketing materials make it clear that it is made for relationships – it targets “serious users” interested in a monogamous relationship, and its messaging places this at the forefront. This is exemplified by the company's website, which states that "Relationships are at the core of everything we do."<sup>64</sup> In addition to its website, Hinge’s YouTube, Instagram, and the Apple App Store pages, all highlight the slogan "Designed to be Deleted." The slogan sets an altruistic tone, reaffirming Hinge’s commitment to relationship-building and a commitment to its users. In an attention economy, social networking apps tend to benefit from keeping users engaged, but Hinge’s branding strays away from this, asserting it is successful when its users no longer need the service – Hinge has its users’ best interests at heart. Hinge’s messaging aligns

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<sup>64</sup> “Hinge Mission,” Hinge, accessed July 17, 2022, <https://hinge.co/mission/>.

with Cialdini's principle of liking, which suggests that people are influenced when they see similarities with the requester. The underlying heuristic of the liking principle is that those we know and like can exert greater influence over us because they are more familiar, similar, and trustworthy.<sup>65</sup> Hinge's altruistic messaging creates a likable brand image, positioning the company as serious about matchmaking and builds user trust.

Hinge also positively adds to its brand image through appeals to *authority*, another influence principle that suggests people are more likely to comply to the requests of those who have power and expertise, like doctors and scientists, because they find their opinions more valuable.<sup>66</sup> In describing its matchmaking process, which includes both humans and algorithms, Hinge has established itself as a dating expert. On the human side, Hinge coined its employees "Love Scientists," who consist of researchers, designers, behavioral analysts, and matchmakers that work in the "Hinge Labs."<sup>67</sup> On the algorithm side, Hinge is transparent and proud of its stable-matching algorithm applied to matchmaking and the *chemistry of love*. Hinge's data-ification of dating, framed as methodical and empirical but with a human touch, leverages the authority of science to add credibility to its brand and its matchmaking product.

Scientific language and an emphasis on the expertise of its cross-functional team creates a sense of authority but may also indicate a curation toward a highly educated audience. A psychology study co-authored by researchers from Northwestern University, Hinge, and MIT Media Lab found that Hinge users are overwhelmingly college-educated.<sup>68</sup> The company's visual materials mostly depict young adults, suggesting its target audience is twenty to thirty years old.

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<sup>65</sup> Muscanell, Guadagno, and Murphy, "Weapons of Influence Misused," 390.

<sup>66</sup> Muscanell, Guadagno, and Murphy, "Weapons of Influence Misused," 391.

<sup>67</sup> "Hinge Labs", Hinge, accessed July 17, 2022, <https://hinge.co/labs/>.

<sup>68</sup> Levy, Jon, Devin Markell, and Moran Cerf. "Polar similars: Using massive mobile dating data to predict synchronization and similarity in dating preferences." *Frontiers in psychology* (2019): 7. <https://doi.org/10.3389/fpsyg.2019.02010>.



Hinge-sponsored news articles further indicate that its target audience is educated and employed. In 2014, Hinge compiled data for CNBC on which Wall Street bank employees were most attractive.<sup>69</sup> In 2017 Hinge compiled another list for Business Insider of the "Most Eligible in NYC," which contained the lucrative jobs and Ivy League college degrees of 40 young and professional users.<sup>70</sup>

### *Privacy Policy*

Hinge's scientific language, however, ends with its Privacy Policy. The Policy provides a vague explanation of data collection practices and uses, re-conveying the company's commitment to helping users to perhaps soften the blow. In "Section 3: Information We Collect," Hinge primes users with a simple justification sentence before describing its data collection activities: "It goes without saying, we can't help you develop meaningful connections without some information about you..."<sup>71</sup> In describing the types of information it collects, Hinge reveals broad categories, including "your personality, lifestyle, interests and other details about you, as well as content such as photos."<sup>72</sup> In "Section 5: How We Use Information," Hinge continues to leverage language that is not only vague but also reasserts their commitment to matchmaking.<sup>73</sup> Some of the main ways it uses information is described in "Section 5, Part B: To help you connect with other users," which includes "recommend[ing] you other users to meet" and "show users' profiles to one another."<sup>74</sup> The Privacy Policy scrapes the surface of its algorithm,

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<sup>69</sup> Katie Little, "The most attractive bankers are...", *CNBC*, July 30, 2014, <https://www.cnn.com/2014/07/29/the-most-attractive-bankers-are.html>.

<sup>70</sup> Nathan McAlone, "These are the 40 most eligible people in New York City, according to the dating app Hinge," *Business Insider*, January 24, 2017, <https://www.businessinsider.com/most-eligible-people-in-new-york-city-according-to-hinge-2017-1>.

<sup>71</sup> "Hinge Global User Privacy Policy," Hinge, accessed July 17, 2022. [https://hinge-ue1-prod-website-assets.s3.amazonaws.com/privacy\\_policy\\_20220328\\_a6cfa6ba89.pdf](https://hinge-ue1-prod-website-assets.s3.amazonaws.com/privacy_policy_20220328_a6cfa6ba89.pdf).

<sup>72</sup> *Ibid.*

<sup>73</sup> *Ibid.*

<sup>74</sup> *Ibid.*

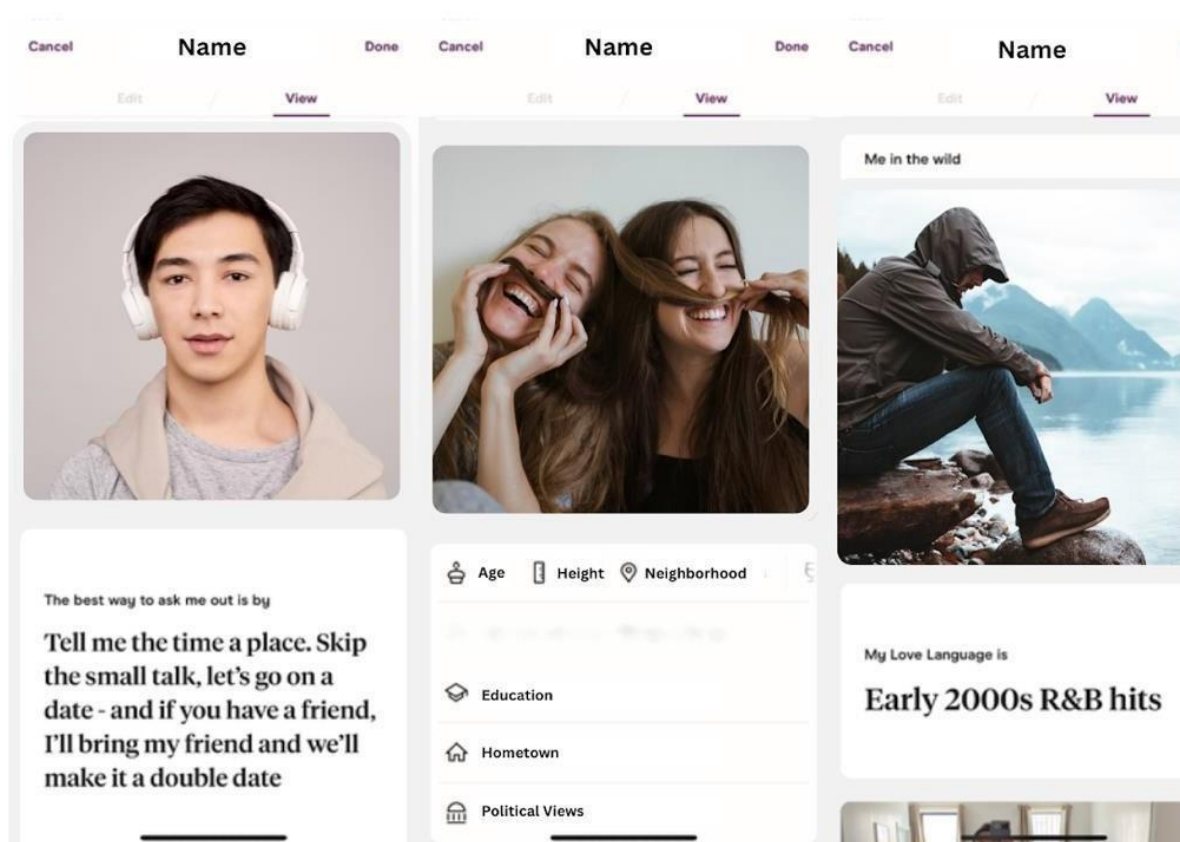
avoiding the words algorithm, recommendation system, or machine learning altogether. While the rest of its materials leverages scientific language, Hinge interestingly strays away, perhaps deliberately, from any scientific details when discussing user data. Instead, the Policy suggests to those who choose to read it, that data collection is necessary to “help” them without providing any technical insight into how it is helpful.

### Hinge’s Interface and Design

#### *Three Categories of Disclosure*

The researcher's experience creating a profile revealed three categories of disclosures that comprise a Hinge profile: biographical information entry, photo submission, and prompt submission (Figure 4). The biographical information component consisted of 24 multiple-choice questions and short answers asking users to provide information such as their name, gender, political views, and frequency of alcohol consumption. The photo component allowed users to choose what images they upload with no parameters. Photos could be uploaded by taking a live picture or granting Hinge access to the users' Facebook, Instagram, or Camera Roll. The prompt component was open-ended in terms of what users can respond but were limited to a fixed number of prompts.

**FIGURE 4: SAMPLE (FAKE) HINGE PROFILES**



### *Dark Patterns and Nudging*

Hinge's interface contained multiple privacy dark patterns that nudged users into disclosing personal information. Nudging is well-studied in HCI research and can powerfully shape when, why, and how much information users self-disclose.<sup>75</sup> The nudges observed encouraged significant self-disclosure that aligned with the company's need for data rather than its users' privacy. When asked to provide biographical information, Hinge incorporated a dark pattern that could lead users to make information visible on their profiles that they did not

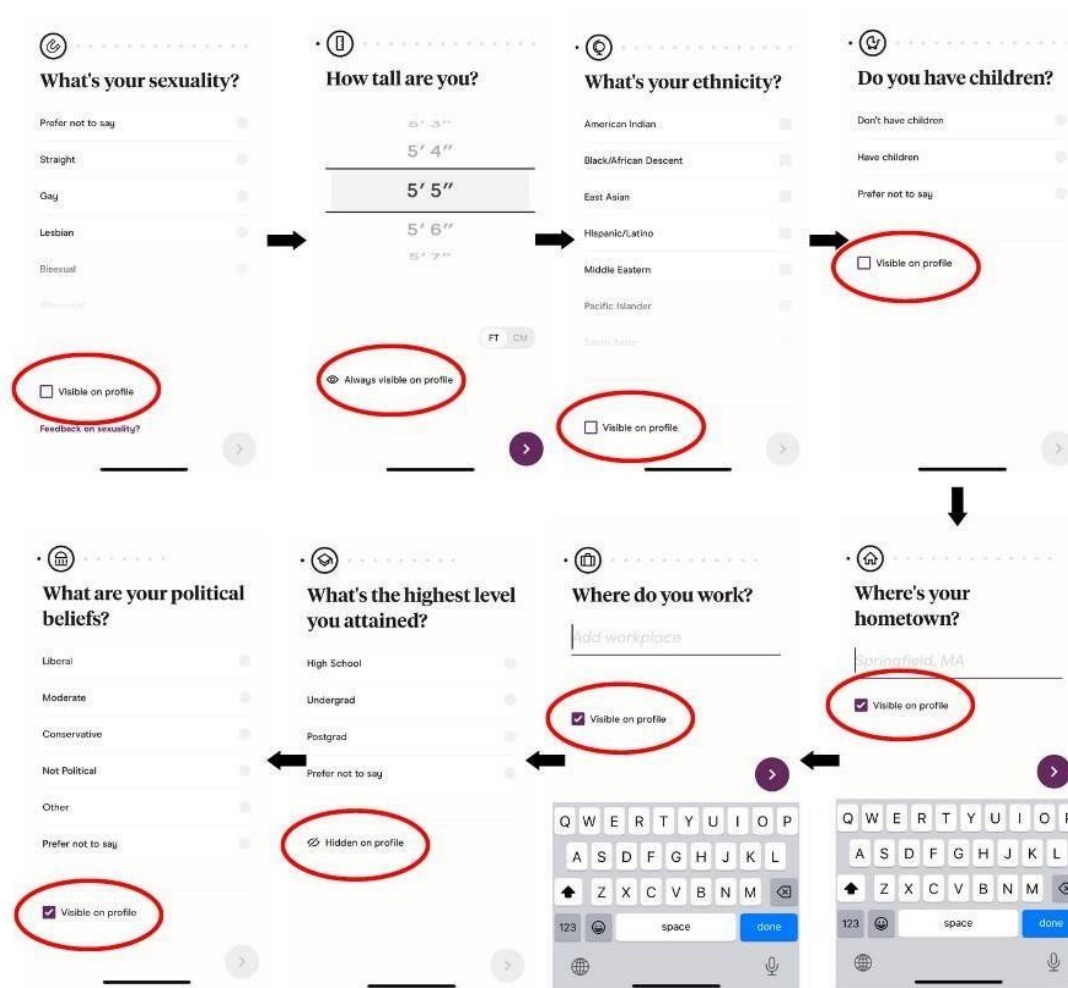
<sup>75</sup> Daphne Chang, Erin L. Krupka, Eytan Adar, and Alessandro Acquisti. "Engineering information disclosure: Norm shaping designs." In *Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems*, (2016): 588. <https://doi.org/10.1145/2858036.2858346>.

initially disclose.<sup>76</sup> As illustrated in Figure 5, some sections were default checked yes to "Visible on profile," while others were unchecked. A few sections were set to "Always visible on profile." The irregularity of the defaults demanded greater focus and intentionality, requiring Hinge users to pay closer attention to adequately control their personal information. This biographical information section was also deceptive because Hinge did not demarcate which sections are required. Rather than skipping to the next section, users could select the option "Prefer not to say" for some sections. But this was not an option for all sections and users must have scrolled all the way to the bottom of the options to even be able to view the "Prefer not to say" option. This inconsistency and added labor during this step could mislead users into accidentally disclosing something they did not have to.

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<sup>76</sup> Waldman, "Cognitive biases," 105.

**FIGURE 5: HINGE BIOGRAPHICAL INFORMATION ENTRY DEFAULTS**



Hinge encouraged users to act in ways that would benefit their dating prospects, which could influence them to disclose more than they would have without this incentive. During biographical information entry, Hinge asked users to provide their last name (which is optional) and encouraged this step with a message that explains its benefit: "[Providing your last name] helps create a safer, more authentic, and accountable community." The message's central incentive is safety. Last names make individuals more identifiable, potentially more accountable for their actions, and perhaps less likely to engage in deviant or anti-social behaviors. Providing last names could certainly make Hinge a collectively safer place. This message, however, did not

acknowledge the individual risks. Users who share their last names could be subject to added privacy risks as they are more vulnerable in the face of hacks or more easily searchable on Google.<sup>77</sup> Despite the collective benefits, disclosing last names decreases individual privacy.

Upon completing the biographical information section and before entering the photo and prompt sections, a transitional message appeared. The message read: "The more you share, the better your matches will be." When inversely read, the message suggests that the less you share, the worse your matches will be. Its underlying assumption is that disclosing more information correlates with better matches, which helps users find a relationship. "Better" can be interpreted as self-disclosing more information that can help Hinge better curate matches for the user. This nudge, disguised as an explicit call to action, could lead users to share more than they otherwise would have, with the expectation that they are rewarded with better recommendations or "matches."

This manipulative message draws upon two social influence mechanisms. Firstly, it leverages Hinge's authority in shaping matchmaking outcomes through its "scientific" process governed by its stable-matching algorithm. The message carries a clear call to action, but the claim underneath suggests it is Hinge's algorithm that delivers the reward of better matches from sharing more. The average user could accept this claim should they defer to the authority and expertise of the algorithm and the company – despite not knowing how the algorithm truly operates and how the company uses their information due to the opaqueness of the privacy policy. The nudge also creates a reciprocal relationship between the user and app through the idea that "you give me information, and I give you better matches." According to the principle of reciprocity, people comply when others give them something in return.<sup>78</sup> By providing Hinge

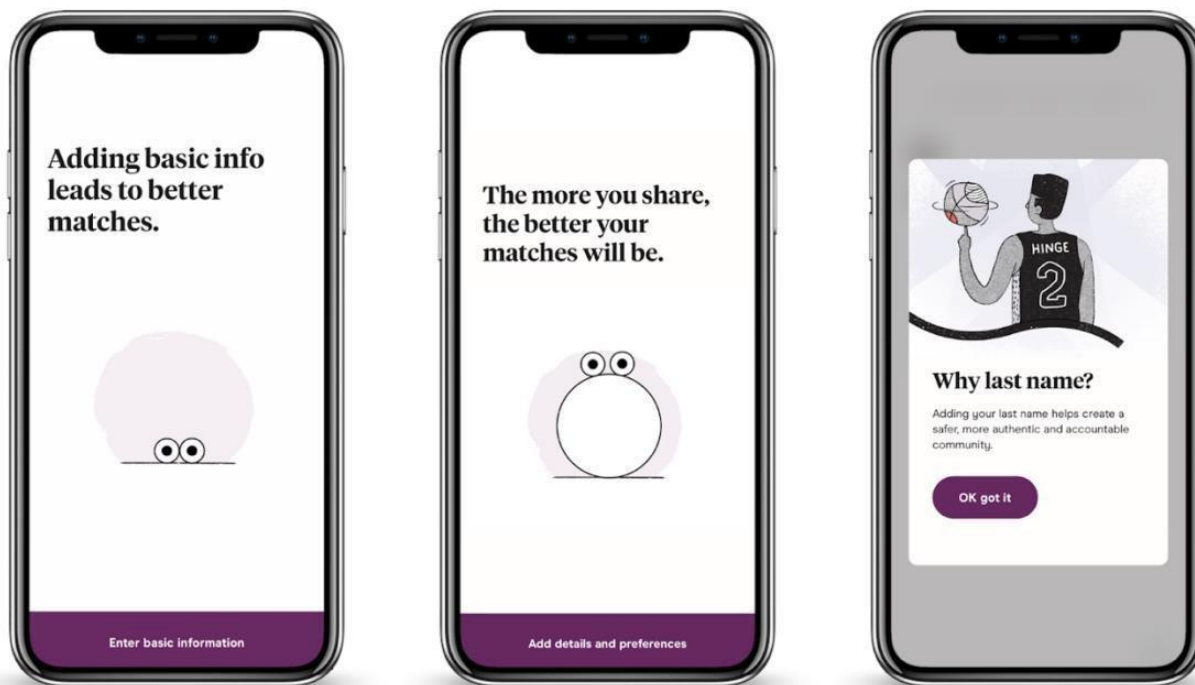
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<sup>77</sup> Gibbs, Ellison, and Lai, "First comes love," 91.

<sup>78</sup> Muscanell, Guadagno, and Murphy, "Weapons of Influence Misused," 392-393.

With more information about themselves, Hinge supposedly reciprocates by giving them something of value: better dating outcomes.

**FIGURE 6: SCREENSHOTS OF HINGE ENCOURAGING SELF-DISCLOSURE**



After moving through the three disclosure categories, profiles that have not fulfilled Hinge’s requirements for six photos and three prompts were flagged as incomplete. Hinge then inoculated the interface with reminders of non-compliance. These reminders manifested as visual indicators, including a red exclamation mark above the profile, a red completion bar (0-100% completeness), and multiple messages to "Complete your profile." These could not be hidden until the requirements were satisfied, which could lead users to self-disclose more to eliminate the visuals. Hinge also deceived users because the requirement is in fact only a suggestion; users could use the app normally with an “incomplete” profile, but this was neither told nor indicated in the interface.

Hinge's push for completeness may facilitate greater self-disclosure through a cyclical process of social proof. The principle of social proof suggests that compliance can occur when people observe others engaging in that behavior, which is viewed as the correct behavior.<sup>79</sup> By "requiring" complete profiles, Hinge users could assume that complete profiles are correct. Incomplete profiles could be seen as undesirable, and it is unclear if an incomplete profile would adversely impact dating prospects – such as notifying other users of their incomplete status or if it would negatively factor into Hinge's algorithm. Consequently, users could feel obligated to fulfill the "requirements" to avoid these unknowable risks.

### *Disclosing "Personality"*

Across the three steps of the profile-creation process, the researcher observed language that encouraged users to disclose their personalities in ways that feel authentic to themselves and desirable to others. Language included: "make a great first impression," "tell your story," and "bring out the real you." After entering biographical information, Hinge stated that "profiles with personality lead to better convos." Hinge then attempts to exteriorize personality through its defining feature – text prompts. With over fifty prompts, the options created an element of choice. Many prompt options centered on hobbies and humor most would consider part of one's "personality." For example, the prompt "Typical Sunday..." will likely reveal the user's leisure activities, and the prompt "The best spot in town for pizza is..." will likely lead to a favorite restaurant. The company, however, ultimately wields power over the topics of information people disclose, and other prompts may encourage the disclosure of more sensitive information. For example, the prompt, "My therapist would say I..." could encourage users to share mental health information.

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<sup>79</sup> Muscanell, Guadagno, and Murphy, "Weapons of Influence Misused," 392.



While the prompts may not appear explicitly malicious to the user, Hinge has the authority to shape what data points exist on a profile and what data they can collect. Biographical entries may reveal drug use, photos may reveal identifiable locations, and prompts may reveal mental health history, which could be especially problematic for users who are a part of marginalized populations. Users were encouraged to self-disclose personal details, including sensitive information, that could eventually be sold or even used by other users to harm them.

### Section III Discussion

In an online dating ecosystem saturated with hook-up apps, Hinge has found its niche as a company and as a product that attracts a younger, college-educated, and relationship-oriented user base. Hinge has also deployed a marketing campaign that depicts it as trustworthy, credible, and likable, grounding its matchmaking product in science and creating a serious brand image through the slogan “Designed to Be Deleted.” But much like its competitors, Hinge benefits from user-generated data and has designed a product that encourages, incentivizes, and pressures users into sharing personal information in ways they might not be aware of. The persuasiveness of these elements may be further enhanced when its users both like and trust the company they are sharing their information with.

The risks of self-disclosure are vaguely discussed in Hinge’s Privacy Policy, which is not transparent about the ways personal data is collected and used. In its design, however, Hinge clearly conveyed high-quantity and high-quality self-disclosure as beneficial for its users, inclining them to disclose more to help their dating outcomes. While the relationship among the user, product, and company is symbiotic, it is also exploitative. Hinge is successful when its users are successful, but its success is not dependent on users’ privacy. There is no way to be certain that Hinge is thinking about persuasion as it designs its marketing materials and product,

but it is certain that Hinge has the incentive, a likeable and authoritative brand image, and a product well-positioned to extract personal information from its users.

While any social networking company can apply persuasive techniques to harvest personal information more effectively, it is possible to teach users how to resist these forces. Sagarin and Mitnick propose a literary intervention, allowing users to better understand how they principles operate and how to recognize when and how they become vulnerable to influence, which can decrease their likelihood of being taken advantage of and better align their self-disclosure decisions to meet their privacy needs.<sup>80</sup>

## **Section IV: Survey and Interview Findings – Hinge’s Social Context**

### Section IV Overview

Section IV presents the analysis based on two sets of research materials: 75 survey responses and 10 follow-up interviews. Both draw upon the lived experiences of Hinge users to understand how they perceive their social environment and how they negotiate what to self-disclose on their profiles. This section first presents survey findings on how Hinge users more broadly perceive their social context and how they expect their profiles and information to be circulated. This is followed by qualitative findings drawn from a thematic analysis that identified various social norms, or implicit rules, that shape Hinge users’ profile self-disclosure decisions. The survey findings are supplemented with anecdotal insight from the follow-up interviews.

To unpack the social norms of self-disclosing, the researcher focused on the parts of the survey material pointing to any type of sharing behavior. The analysis systematically identified some of the norms users face when deciding to self-disclose personal information across the

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<sup>80</sup> Muscanell, Guadagno, and Murphy, “Weapons of Influence Misused,” 393-394.

three disclosure categories identified in the walkthrough study: biographical information, photos, and text prompts. These norms were drawn by examining the survey data for normalizing speech and grouping them into themes. The norms that surfaced are injunctive, meaning that they guide users via perceptions of how most others would approve or disapprove of the self-disclosure behavior.<sup>81</sup> The findings show that these social norms, like Hinge's design, can also shape the quantity and quality of information self-disclosed in Hinge profiles.

### General Survey Findings

The analysis begins by first focusing on general survey observations about Hinge users' perceptions of how their personal information is circulated, including their conceptualizations of who can see their profiles and how they believe their profiles circulate within Hinge and beyond.

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<sup>81</sup> Cialdini, Kallgren, and Reno. "A focus theory of normative conduct," 201.

**FIGURE 7: GENERAL SURVEY FINDINGS**

<b>What are your perception of other Hinge users?</b>	<b>N</b>
Serious	23
Committed, less casual, relationship-oriented	36
Higher/better quality	8
<b>Is your Hinge profile public or private?</b>	<b>N</b>
Public	70
Private	3
Both	2
<b>What are the privacy risks of having a Hinge profile?</b>	<b>N</b>
Data leakage, screenshots, data being collected and sold	10
Context collapse	28
Safety (stalking, harassment)	2

### *Perceptions of Hinge and its Users*

When asked to describe the type of users Hinge attracts, many used adjectives that align with the company’s vision and target audience discussed in the Section III. 23 respondents described Hinge users as “serious,” referring to their relationship-oriented intentions. Another 36 respondents similarly described Hinge users as “committed,” “less casual,” and “wanting relationships.” Altogether, this shows that most respondents perceive Hinge as an app that caters to individuals looking for short-term/long-term relationships and a dating-centric experience as opposed to casual sex, one-night stands, or hookups.

Multiple respondents interestingly acknowledged the role of Hinge’s marketing and branding in establishing its reputation as a relationship-oriented app. P17 described that Hinge feels “like less of a game, more altruistic, and not as monetized compared to other apps that try

to keep you engaged,” while P59 states that Hinge has managed to “distinguish itself from Tinder.” But for some, their actual experiences do not align with this promise. P20, for example, mentioned that “Hinge is branded as more relationship-focused, but I have also gone on dates with many guys who don’t actually want a relationship.” P18 also expressed that Hinge is branded as an app that is “supposed to attract people who are serious about a relationship, but they often aren’t.” These perceptions of Hinge suggest that it has successfully marketed itself as a relationship-oriented app for “serious” users as described in Section III. While many respondents feel aligned with this, other’s experiences may not always live up to Hinge’s promise.

Eight respondents described Hinge users as “higher” or “better” quality, referring to user’s credentials within the realms of education and employment – this also aligns with the Hinge-sponsored news articles discussed in Section III, which suggests that the app is catered to educated and employed professionals. P4 elaborates on the definition of quality, which refers to having “graduated from better colleges” and having more “serious full-time jobs in prestigious industries like finance and law.” Respondents like P10 explicitly compared the quality of Hinge users to those of other apps, stating that Hinge users are “higher quality compared to Tinder.” P8 echoes this, further specifying that Hinge is “better quality than Tinder and Bumble since there’s a smaller group of people,” suggesting that Hinge attracts a more niche audience compared to its direct competitors.

#### *Perceptions of Hinge Profiles as Private vs. Public*

70 survey respondents classified their Hinge profiles as public, three considered it both public and private, and two considered it private. In explaining why their Hinge profiles are public, many alluded to the concept of control – having control over the information they choose

to self-disclose on their profiles, but not having control over who sees their profile and what is done with their information once Hinge disseminates it to others (Figure 8). In conceptualizing control, many respondents that categorized profiles as public referred to control as the inability to control their audience – who on Hinge can view their profiles. Respondents alluded to the possibility that “anyone with a Hinge account can see it” (P56), while some broadened their perception of the audience, adding that “anyone with a phone can make a Hinge profile and come across it” (P69). Others referred to Hinge’s design features in allowing only partial audience control, mentioning that while they can set an “assigned radius” (P66) consisting of age, location, and other parameters, but “you cannot restrict viewers to only your friends” (P60). Given the limitations of Hinge’s audience control options, “you’re ultimately putting yourself out there publicly” (P76).

The possibility that profiles, which contain personal information, can spread into online and offline spaces external to Hinge is another benchmark for publicness. Control, in this sense, refers to what is done with profile information beyond their immediate Hinge audience. This conceptualization of publicness acknowledges that profiles and the information contained within them can be disseminated or used outside of the app in non-consensual ways. Five respondents specifically mentioned the affordance of the mobile device screenshot in allowing anyone to document and spread their information elsewhere, such as “sharing profiles via text” (P63). Four respondents mentioned that their profiles enable other users to search for them online through search engines like Google and social media platforms like LinkedIn. Six respondents referred to the online nature of their Hinge profiles as enough to consider it public, using phrases like “out there,” “on the Internet,” and “once it’s online” to describe the void where their personal information can uncontrollably spread.

**FIGURE 8: CONCEPTUALIZING PUBLICNESS AS “CONTROL”**

<b>Theme</b>	<b>Examples</b>
<b>Lack of audience control</b>	<p>“It is displayed for people I don’t know.”</p> <p>“Anyone with a Hinge account can see it.”</p> <p>“Anyone can come across it and you don’t get to choose who views it.”</p> <p>“Anyone can technically see if they apply the right filters.”</p> <p>“You cannot restrict viewers to only your friends.”</p> <p>“Anyone can download the app and can see anyone in their area.”</p> <p>“There’s no telling how many people have seen your profile.”</p> <p>“People I don’t know can see it.”</p>
<b>Lack of information control</b>	<p>“Given anyone could see that profile and share that information outside of the app, I treat it as public.”</p> <p>“Public. People can send screenshots, so everyone could access what is on my profile hypothetically.”</p> <p>“Public as any user on the app who encounters my profile can screenshot it.”</p> <p>“Anything posted in an app or online or anywhere really is more or less public.”</p> <p>“If I put it on the internet, it's public.”</p> <p>“If I put it out online, I consider it public information.”</p>

### *Perceived of Privacy Risks*

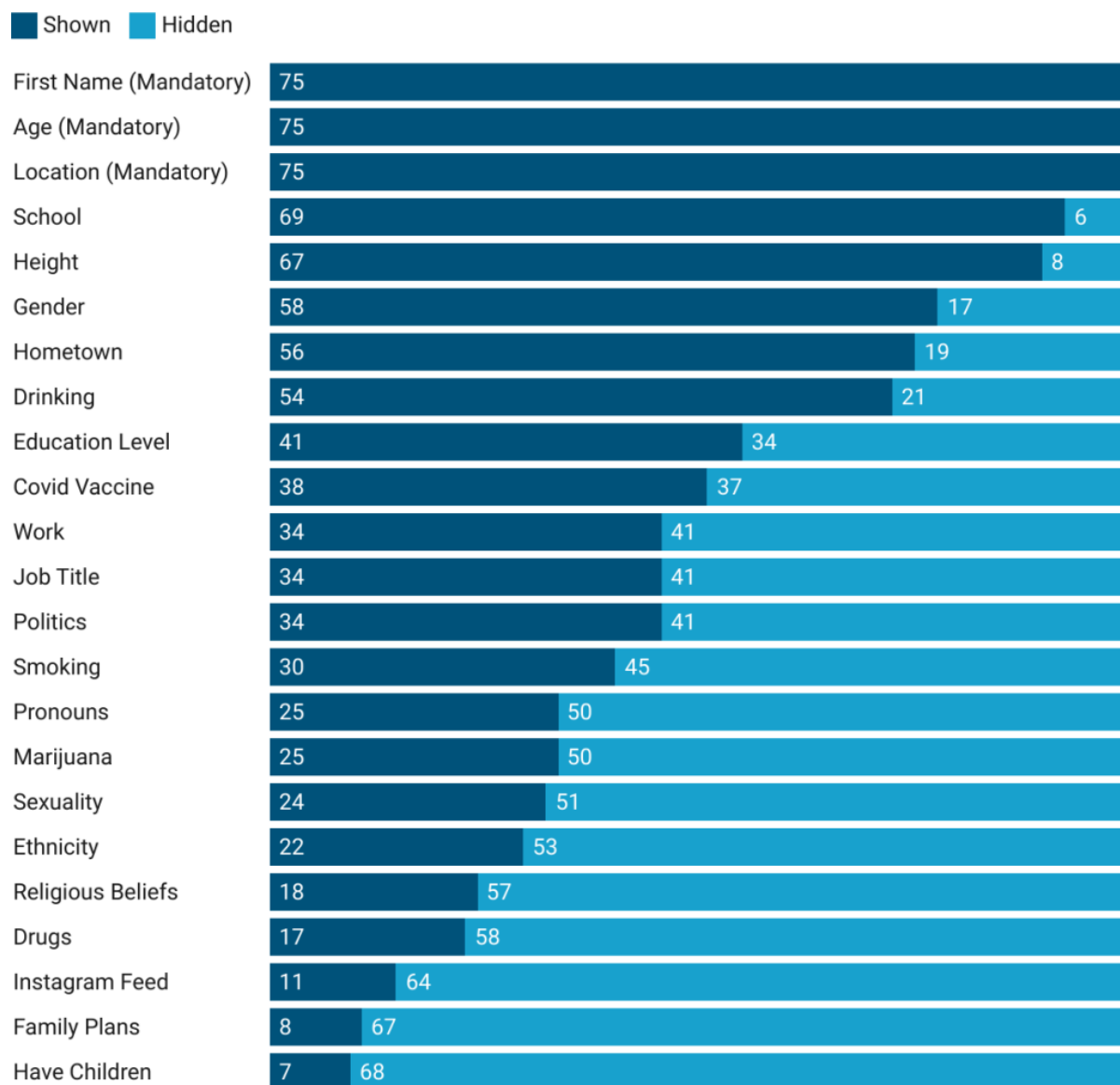
All 75 survey respondents identified one or more privacy risks of their Hinge profile, illustrating that users are well-aware of the risks of self-disclosing. The most common risk expressed is context collapse, which is having unintended audience members view the profile,

followed by safety risks, including stalking and harassment. Another risk expressed is concern over personal information being collected by the corporation and sold to third parties.

### *Disclosure of Biographical Information*

In the surveys, Hinge users self-reported the biographical information they reveal and conceal on their profiles (Figure 9). The results show that all 75 respondents self-disclose more biographical information than the bare minimum, which includes first name, location, and age. 69 revealed their school, 58 revealed their gender, 56 revealed their hometown, and 54 revealed their alcohol consumption habits. On the opposite end, only 7 revealed whether they currently have children, 8 revealed their family plans, 11 revealed their Instagram feed, 17 revealed their drug use, 18 revealed their religion. The most divided information types include education level, Covid vaccine, work, job title, and politics. On average, respondents disclosed nine types of biographical information out of the 20 categories that are not mandatory. This data creates an entry point into exploring if self-disclosing more biographical information than the bare minimum is a norm, and if self-disclosing not enough information may be considered atypical.



**FIGURE 9: BIOGRAPHICAL INFORMATION REVEALED ON HINGE PROFILES**

### Social Norms of Self-Disclosure on Hinge

Through the surveys, Hinge users were asked about their profile disclosure decisions across the three categories (biographical information, photos, and text prompts). Respondents described the types of information they chose to reveal and conceal as well as the reasoning behind their disclosure decisions. Survey data was then supplemented with follow-up interviews, which provided additional rich anecdotal insight that is interweaved to add color to the survey

findings. After data collection, the researcher identified patterns in the open-ended survey data, revealing injunctive social norms that can signal to users what and how much they ought to self-disclose on their Hinge profiles – these norms indicate the importance of self-disclosing to gain social approval from others and avoid social disapproval.

#### *Norms Around the Quantity of Self-Disclosure*

**Hinge profiles ought to show enough information – profiles that are sparse or “low effort” are frowned upon.** A central category of normatizing speech condemned *not sharing enough* personal information. The survey shows that Hinge users often stigmatize others based on the quantity of self-disclosure on profiles, suggesting that there are norms around how much information others approve and disapprove of. These social stigmas arise when others disapprove of and even discriminate against those with profiles that seem different, or deviant, compared to the rest. When asked a vignette question about coming across a “sparse Hinge profile,” respondents revealed various assumptions they make about profiles that fail to disclose a normal amount of information. This question allowed users to come to their own conclusions about what a “sparse” profile looks like based on their lived experiences. Profiles that are sparse are negatively perceived, suggesting that others either approve or disapprove of profiles based on how much information is disclosed.

Respondents revealed various assumptions they make about the other user, the majority of which are negative (Figure 10). The most widely surfaced assumption is that the other user is “low effort,” which was brought up by 14 survey respondents. P26 states that Hinge’s design requires users to put in more effort to show their personality, and the “average person will put a lot of information on their profile.” Due to this standard, P26 says it is easy to “weed out people who are not serious” by comparing the length of their profile to what he deems as average, which

may depend on each user and their experiences interacting with others. P17 believes that all Hinge users “have to put in a foundational amount of effort,” making it “obvious when people don’t put in enough effort.” P17 also referred to the role of Hinge’s design in shaping this quantity norm, saying that the app “requires a certain amount of stuff on profiles necessary to get a better sense of people’s personality.” Additionally, other assumptions about sparse profiles include negative personality traits like being boring, a “not serious” user who does not want a relationship, and concerns over authenticity like being a catfish or a bot.

The quantity of self-disclosure can be used to gauge whether a profile is legitimate, which is an integral part of gaining approval from other users. When asked how they determine if a Hinge profile is authentic and trustworthy, respondents echoed that more information is better: “The information shared must not be too little” (P5); “If they leave off too much info it seems suspicious to me (P21). Others have developed more specific criteria, such as P40 who believes that a profile should have “all six photos, plus school and/or job listed, plus pictures with friends/family.” This overwhelming disapproval of profiles with less information makes it clear that norms exist around how much self-disclosure is necessary and desirable within the Hinge context to be accepted by others. Respondents also suggest that there are sanctions for those who do not follow the norms. If users decide to act on their disapproval, or punish others, it can lead to negative outcomes such as being rejected – P26 will not match with anyone if the profile has “less than the usual information,” and P4 “won’t waste time and X” anyone whose profile does not contain enough information.

Norms around the quantity of information are especially troubling from a privacy perspective. When users perceive that more information is better, they could be encouraged to disclose more details about themselves than they otherwise would have if this norm did not exist.

The overwhelming negativity associated with sparse profiles could incentivize users to change their behaviors. In a follow-up interview, P73 alludes to the pressure he faced when initially creating a Hinge account. Upon turning to his peers for advice, P73 was advised to “fully flesh out his profile” to “look legit” and avoid being “the odd one out.” Quantity norms are also interesting when connected with the walkthrough study observations described in Part III, in which Hinge’s profile-creating process creates a false sense of “requirement” and tells users that “more information will lead to better matches.” It is possible that Hinge’s design, which encourages “complete” profiles and explicitly tells users that “sharing more will lead to better matches,” is a potential origin point for this norm.

**FIGURE 10: ASSUMPTIONS ABOUT SPARSE PROFILES**

<b>Positive/Neutral Assumptions</b>	<b>Examples</b>
	They care about their privacy
	They are low key
	They are shy
<b>Negative Assumptions</b>	They only swipe for fun
	They are not “serious,” only looking for sex, to hookup, or for a one-night stand
	They are an inactive Hinge user
	They are an inauthentic user (bot, catfish, scammer)
	They are uninteresting, unclever, dumb
	They don’t put in much effort
	They are boring
	They are suspicious
	They are hiding something

### *Norms Around the Quality of Self-Disclosure*

Hinge users express an awareness that their self-disclosures on their profiles is paramount to establish a positive first impression, acting as a gateway to a potential match. But many are aware that what they disclose opens them up to either social approval or disapproval from others. Users depend on social norms that create guideposts about the specific types of information they ought to hide from their profiles, developing mental models about how certain types of information can impact how their profiles are perceived by other users, as well as how disapproval from others might have tangible, negative consequences on their dating outcomes. Some of these outcomes include “discouraging others from matching” (P13) and having their disclosure become a “barrier to entry for a first date” (P19).

**Avoid disclosures that can lead you to be judged negatively by other users.** Another category of normalizing speech had to do with *being judged by others* and self-disclosing *appropriate information*. The idea that “some information has other associations with them factors into first impressions” (P43) plays an important role in what types of information should be avoided on the profile. When asked what biographical information they choose to withhold from their profiles, respondents have strategically thought through what types of disclosures may trigger these judgments and have consequently adjusted their disclosures to mitigate potentially negative outcomes. Respondents expressed an awareness that their disclosure of biographical information may lead others to “misunderstand or bucket them in a way that would create a wrong/bad impression.” (P73), acknowledging that certain categories of information may be more likely to trigger negative judgments from others. These information types include family plans, religious views, drug use, and marijuana use. As evident by Figure 9, these specific biographical disclosures are more infrequent than others, with only 25 respondents disclosing

marijuana use, 18 disclosing religious beliefs, 11 disclosing drug use, and 8 disclosing family plans. In explaining their decisions to not disclose family plans, which entails whether they want to have children, some survey respondents explain that this information is “not relevant at the moment” (P2) and believe the information is something that they will think of later “down the road” (P35). But multiple respondents brought up that this type of disclosure could be off-putting in a profile, saying that disclosing family plans is “too personal too soon,” (P57) and sharing “too much info off the bat” (P63).

In a follow-up interview, P4 elaborated how disclosing this information leads to negative judgments, explaining his own reaction when he sees profiles of users who share their family plans: “when I see that on their profile, I get kind of scared because it makes them seem so serious – like hold on, I want to date you, but I don’t want to talk about having kids yet.” P17, also during an interview, shared that he currently does not know if he wants to have children in the future and fears that this disclosure will prevent others from liking his profile if they strongly want to have children. According to P17, users can act rashly to the disclosure of family plans, especially if it is a dealbreaker to them. He believes these judgments are unfair because “it’s a decision you make once you’re in a relationship” and that “meeting the right person might help him make up [his] mind.” To avoid users judging or rejecting him, participants like P17 believe it is safest to just leave it off the profile. Given the sample is mostly 23 to 27 years old, it is important to note that the widespread avoidance of family plan disclosures could be age specific.

Another biographical disclosure most respondents avoided is religious views, which can further stimulate negative reactions. P34 expressed that she is “worried about people making judgments without taking the chance to get to know [her],” so she avoids disclosing her Catholic faith to avoid assumptions that she is “against abortion and same-sex marriage.” P40 also

expressed that he does not want others to make assumptions about “how religious I am and what role religion plays in my life.” In a follow-up interview, P58, who identifies as Muslim, does not disclose her religion in her Hinge profile to “avoid being judged and stigmatized” because of the negative associations others may make about her purely because of her religious beliefs. P58 also does not disclose that she identifies as bisexual, believing that sharing her sexuality and her religious beliefs in conjunction will lead others to “fetishize her.” P58’s concern suggests that judgments about one type of information like religious beliefs can also intersect with other information types like sexual orientation.

Other respondents mention that they avoid marijuana and drug use disclosures out of fear that unintended audience members may potentially see that information. When asked about their broader privacy concerns when using Hinge, 31 respondents described what Marwick and boyd define as context collapse, which is an inevitable aspect of social networking environments that flatten different contexts into one audience.<sup>82</sup> In providing greater detail about their context collapse concerns, respondents named broader audiences, such as work colleagues and relatives, that they would not want to view their profiles. Others were more specific, identifying individuals like first cousins, “my most recent ex”, or “my real estate broker.” A few respondents interestingly referred to context collapse, not as others gaining unwanted access to their information, but as them gaining unwanted access to other people’s information, notably seeing someone who they know is in a committed relationship – the underlying concern is that the profile suggests infidelity.

When asked a survey question specific to context collapse, asking users to explicitly state who they would not want to see their Hinge profiles, 41 respondents mentioned individuals from

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<sup>82</sup> Marwick and boyd. "I tweet honestly, I tweet passionately, 115.

their professional lives, including co-workers, colleagues, bosses, managers, and supervisors. The prevalence of this concern is unsurprising given the sample's demographic and Hinge's target audience that includes many working professionals. P3 explains that this type of context collapse between the professional and personal sphere is undesirable because it can affect her offline, professional reputation, and "what you see on a colleague's profile might change the way you look at them." P51 added color to this in an interview, saying that the inevitable professional- personal collapse makes her feel awkward because having a Hinge profile may signal to her colleagues that she is "desperate for love."

These disclosures can also have more severe, real-life consequences. P21 says that the company he works at explicitly "does not allow smoking marijuana," so he avoids that disclosure in case someone from work were to come across his profile and report it. Some respondents have already experienced this type of collapse or have anticipated that it might occur, consequently altering their biographical self-disclosures to mitigate the risks. Respondents like P26 and P20 chose not to disclose their drug use because they consider that information "risky" and inappropriate in the work context. Anticipation over the professional-personal context collapse is a widespread concern, enacting control over what biographical information is more acceptable on the profile should it somehow leak into their work lives.

These negative judgments about specific information types, however, may fluctuate and change over time. P21, who has been using Hinge since 2019, describes in a follow-up interview how these judgments about certain information types are temporal. In discussing Covid-19 vaccination self-disclosures, which 38 out of 75 respondents disclosed at the time of data collection in July 2022, he described how things have changed over the course of the pandemic: "When the vaccines first started to roll out, everyone had their vaccination status on their



profiles. If you didn't have it on your profile, you'd assume they're an Anti-Vaxxer. But flash forward to 2022, it's weird to disclose that and fewer people do it anymore. The assumption now is that everyone is vaccinated at this point." Each information category may have its own unique nuances and assumptions, suggesting that these norms are dynamic as the social environment changes.

**Hinge profiles ought to convey your personality.** The idea that Hinge profiles can *convey personalities* is central to the company's brand image, as discussed in Section III. When asked what factors into their prompt disclosures, 13 survey respondents specifically mentioned "personality" while many others described elements of their personalities or referred to personality in ways like "giving color into who I am" (P13). Personality can be conveyed by revealing the hobbies and activities they partake in during their spare time, as well as by showcasing more abstract parts of themselves, notably their sense of humor, wittiness, and intelligence. P4 adds that Hinge's text prompts are especially "good at adding more personality to profiles" compared to other dating apps. Personality can also be conveyed through photos, with users uploading photos of their friends, family, daily activities, and travel experiences.

Follow-up interviews added anecdotal insight into how conveying personality can conflict with privacy. P3 described this tension when deciding to post a photo of herself at her martial arts gym, knowing that people within her geographic area could easily figure out the name and location of the gym and stalk her in person. After weighing the potential negative outcomes, P3 decided that the photo is "worth the risk because I'm showing off my interest and something I'm passionate about." P24 also described this risk reward trade-off when describing the photos she has chosen of her posing with friends, saying that it is important to have pictures with friends on your profile because it "shows that you have a social life." Although P24

“typically asks friends for consent” before posting photos of them on traditional social media platforms like Instagram, she did not feel the need to in the context of her dating app profile and assumed her friends are doing the same. In the pursuit of conveying personality through their profiles, Hinge users can self-express, but their disclosures can have privacy tradeoffs.

**You should self-disclose what appears desirable (and what will improve your dating outcomes).** In addition to conveying their personality, many users talked about *appearing desirable* to potential partners. Hinge users also balance their own perceptions of what self-disclosures are considered desirable to others and may strategically think about how to make themselves appear more desirable to improve their dating outcomes. Respondents describe feeling incentivized to include certain biographical information, text prompts, and photos that make them look good to others. Within the context of biographical information, P4 and P55 express that disclosing the name of their Ivy League university makes them seem more attractive because it “signals intelligence.” In a follow-up interview, P61 expressed a similar sentiment of wanting to disclose the name of her undergraduate university, but the pressure to appear intelligent conflicted with her privacy goals: “I feel like I should put my college on my profile as it shows I’m educated, but I know that it makes me more searchable online – I’ve had guys find my Instagram and LinkedIn and it creeps me out. When I took my university off [my profile], I felt like I started to get fewer matches.” P24 also expressed this conflict from revealing her job title and place of work: “I’m an engineer and proud of it, so I want to show others that I have my life together. But a lot of people in my area work at the same company so people could totally search for me in the company database.”

Hinge users face pressure and feel incentivized to disclose in ways that make them look good to others and their decisions can also be driven by the desire to spark positive interpersonal

interactions. When describing their text prompt disclosures, 20 respondents mention their desire to share in ways that stimulate a conversation or discussion with other users, suggesting that prompts can be driven by the goal of wanting to engage potential partners. Within the context of photos, respondents unsurprisingly “only choose the most flattering photos” (P15) and avoid photos that would make them seem unattractive. Perceptions around what is considered physically attractive may vary from individual to individual. While some users want to highlight their best features, others believe that appearing attractive is appearing natural or showcasing them smiling and laughing. Furthermore, it is possible that Hinge’s design adds extra pressure to disclose desirably. By straying away from the typical dating app swiping model, instead making users “like” and reply with a comment to a specific photo or text prompt, each disclosure becomes a valuable opportunity to attract a potential partner and initiate first contact.

#### Section IV Discussion

When building a Hinge profile, self-disclosures of biographical information, text prompts, and photos are needed to facilitate interpersonal interactions and establish connections with potential romantic interests. Through the surveys, Hinge users provided insight into what self-disclosure behaviors are considered appropriate and desirable in a profile, which is further backed by the follow-up interviews. In describing their decision-making processes, various norms emerged around the quantity and quality of self-disclosure. As they decide to reveal personal information, Hinge users factored in their social environment, developing decisional shortcuts about what they think they should and should not be disclosing and how their disclosure will impact their dating outcomes. But the pursuit of building a Hinge profile entails a privacy paradox: while participants are aware of privacy risks of self-disclosure, social norms

required individuals to share enough information and present themselves in the right way to avoid being judged by others, convey their personalities, and appear desirable.

The norms unveiled through this portion of this study provide insight into some of the factors that can influence self-disclosure, but it is valuable to address that these norms are not all-encompassing nor representative of all Hinge users. But the findings do suggest that there are unwritten rules on what is expected or (un)desirable, which can powerfully influence self-disclosure behaviors. While abiding by these social norms can have positive matchmaking outcomes, the pressures and incentives that come from the desire to be accepted by others, including potential romantic partners, can lead users into disclosing more personal information and disclosing in certain ways to improve their dating experience.

## **Section V: Conclusion**

Hinge is a popular dating app that leverages an algorithm to connect users with potential romantic partners. Like most dating apps, users must self-disclose onto profiles to participate, which contain a mix of text and visuals. But Hinge has differentiated itself through its marketing and brand image as a serious and relationship-oriented app that encourages users to showcase their personalities in their profiles. The resulting information-rich profiles, however, inevitably make users vulnerable to various institutional and social privacy risks. While the information self-disclosed onto profiles can be used by the app to suggest better matches and can be sold by Hinge to third parties, it can also be accessed by other users who are browsing profiles and can document and use this information in unintended, even malicious ways. This study shows that Hinge users are aware of the privacy risks yet continue to share large amounts personal information – with many putting a lot of thought into the information they share, calculating the risks and rewards.

But this study also explores how self-disclosure may in fact be more complicated despite that users are making a conscious effort to self-select information, that users may not have total cognitive agency over their decisions to share personal information in the face of persuasion and social influence embedded in the sociotechnical system. Within the technical context, influence manifests as persuasive marketing and design that prime users into wanting to disclose personal information. Within the social context, users encounter various social norms that can also influence their disclosure decisions. Throughout the user experience, Hinge users can be pressured and incentivized to share personal information deemed appropriate and desirable, at the expense of privacy. Future research can examine how users from different demographic backgrounds are impacted differently and perhaps self-disclose in unique ways.

Social networking, and more broadly the Internet is here to stay, and users will continue to be exposed to many platforms that want to acquire their personal information. The ubiquity of online interpersonal communication may potentially lead individuals to become more complacent in their online self-disclosure decision making. Furthermore, it is possible that our constant connectivity to the Internet and tendency to multitask online may increase cognitive loads, leading people to rely more on heuristics and norms, including persuasion social influence, when making decisions about how they should behave online. As a result, users may become more vulnerable to divulging personal information to companies and each other. The best defense that users can develop is awareness – knowing that they are not immune to privacy risks, to be well-informed about the social influence tactics and their mechanisms. There is a need for everyday users to think more effortfully and analytically when deciding to share personal information.

## Appendix

### Sample Open-Ended Survey Questions

#### Demographic Questions

1. What is your first name?
2. Which state do you currently live in?
3. What is your gender identity?
4. What is your age?
5. What is your sexual orientation?
6. What is your highest level of schooling?
7. What is your ethnicity?
8. How would you describe your current relationship status?

#### Multiple Choice

1. In addition to Hinge, what other dating apps have you used? (Select all that apply)
  - a. Tinder
  - b. Bumble
  - c. Coffee Meets Bagel
  - d. Lox Club
  - e. Plenty of Fish
  - f. OkCupid
  - g. Jswipe
  - h. Eharmony
  - i. Grindr
  - j. HER
  - k. Other
2. Please select the information you show/hide on your Hinge profile: (This question is only asking whether you disclose this information on your profile. It is not asking you for any personal information about your actual behaviors, beliefs, etc.)
  - a. Work (show/hide)
  - b. Job Title (show/hide)
  - c. School (show/hide)
  - d. Education Level (show/hide)
  - e. Religious Beliefs (show/hide)
  - f. Hometown (show/hide)
  - g. Politics (show/hide)
  - h. Gender (show/hide)
  - i. Pronouns (show/hide)
  - j. Age (show/hide)
  - k. Height (show/hide)
  - l. Sexuality (show/hide)
  - m. Ethnicity (show/hide)
  - n. Location (show/hide)
  - o. Children (show/hide)
  - p. Family Plans (show/hide)

- q. Covid Vaccine (show/hide)
- r. Drinking (show/hide)
- s. Smoking (show/hide)
- t. Marijuana (show/hide)
- u. Drugs (show/hide)
- v. Recent Instagram Feed (show/hide)

### Open-Ended Questions

1. What are some reasons you may choose to hide information about yourself on your Hinge profile?
2. *Institutional privacy* deals with institutions (like Hinge) managing users' personal data, and potentially selling data to third parties. *Social privacy* refers to situations where other, often familiar, individuals are involved, such as receiving an inappropriate friend request from a work colleague. What are the privacy risks of your Hinge profile?
3. Would you consider the information on your Hinge profile as public or private? Please explain your choice.
4. What kind of users does Hinge attract? If you've used other dating apps, how are Hinge users similar or different?
5. What types of photos do you choose to include on your Hinge profile? Are there any types of photos you avoid?
6. Which text prompts do you include on your Hinge profile and why? (About Me, Story Time, Getting Personal, Date Vibes, etc.)
7. What are your thoughts on Hinge's voice prompts feature?
8. You come across a sparse Hinge profile with one picture and a couple of prompts. What assumptions would you make about the user?
9. A work colleague's profile shows up on your feed. How would you react?
10. Is there anyone you would not want to see your profile? (family, co-workers, etc.)
11. Have you ever looked someone up online whom you saw on Hinge? If so, how did you look them up and what were you able to find?
12. Do you think that other dating app users are searching you up online? How would that violate your expectations of privacy?
13. Have you ever seen screenshots of someone else's Hinge profile? If so, where and what was the context?
14. Knowing that any Hinge user (including yourself) can leverage others' profile information to search them up online, how does that impact your perception of safety on Hinge?
15. Have you ever deleted or unmatched someone on Hinge? If so, why?
16. How do you determine if a Hinge profile is authentic and trustworthy?

## Sample Semi-Structured Interview Questions

### Demographics

- What is your name?
- How old are you?
- What gender do you identify as?

### Perceptions of Privacy

- What are your thoughts on searching up users online using the information they disclose?
- Do you think other people search you up online/through other social media platforms?
- Have you ever taken a screenshot of a Hinge profile?
- Have you ever seen a screenshot of a Hinge profile?
- Do you think your profile is being seen by other people outside of Hinge?

### General Experience

- Talk to me about your Hinge experience...
- What do you think about the app's design? What features do you like/dislike?
- If you've used other dating apps, how has your Hinge experience been different?
- Have you ever stopped using Hinge? If so, why?
- Do you trust other Hinge users? Why or why not?
- Do you think Hinge is safe? Why or why not?
- Do you think Hinge users are similar/different to other dating app users? (like Tinder and Bumble)

### Profile

- Walk me through your dating app profile.
- Why did you choose to disclose\_\_\_\_\_?
- What are you trying to convey through your profile?



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