Folk Theories of Online Dating: Exploring People’s Beliefs About the Online Dating Process and Online Dating Algorithms

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Abstract
How do online daters come to understand and make sense of their online dating experiences and the algorithms that underlie online dating platforms? Across two mixed-method studies, we take a metaphoric approach to identify and explore people’s folk theories about traditional dating, online dating, and online dating algorithms. In Study 1, we take a quantitative approach and use an innovative wiki-survey procedure to identify individuals’ folk theories of online dating and their associated themes through content analyses. In Study 2, we take a qualitative approach, exploring participants’ folk theories through in-depth interviews, extended case method, and grounded theory. Our studies uncovered two folk theories unique to traditional dating (movies, nurturing), one folk theory unique to online dating (game), three folk theories related to online dating algorithms (filter, personalized advertisements, bracket), and two folk theories that were found to overlap between traditional and online dating (shopping, chance and randomness). Our findings provide novel insights into how daters make sense of traditional and online relationship development processes as well as the algorithms that underlie online dating platforms.

Keywords
folk theories, algorithms, relationship initiation, online dating, traditional dating

The Internet has transformed how many people find romantic relationships. Over a third of Americans have used an online dating service and a quarter of Americans have met up in person with someone they met through online dating (Anderson et al., 2020). In line with this rise in online dating, daters have had to adjust their expectations and methods for courting romantic partners from the traditional dating context to the online dating context, adapting to the new affordances, constraints, and features that are uniquely present in online dating platforms.

As with traditional dating, hopeful online daters are concerned with finding a compatible partner—someone who matches their ideals, interests, and relationship goals. To this end, online dating services often distinguish themselves by their asserted ability to provide users with especially compatible matches. By using hidden algorithms that accommodate factors including but not limited to the user’s preferences in a partner (e.g., does not smoke), type of romantic relationship the user is looking for (e.g., short-term, long-term), and the user’s activities on the service (e.g., like-to-dislike ratio), online dating services curate recommended potential partners. These algorithms are often marketed to users by their “scientifically backed” ability in determining compatibility scores, however the exact inputs and methods that the algorithms use to calculate these scores remain proprietary (Sharabi, 2021). Users may be aware that these hidden algorithms exist but may have little insight into how their own information and actions on the online dating platform influence the output of these algorithms’ recommendations for matches.

Given the hidden and complex nature of the algorithms that underlie online dating services, how do individuals come to understand and make sense of the full online dating process, from profile creation to partner selection? How do their conceptualizations of this process—their folk theories of online dating—influence how they use online dating services to form romantic relationships?

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Folk Theories

Folk theories, also known as naïve theories or lay theories, are people’s intuitive explanations for why a phenomenon, such as an event, a behavior, or a social process, has occurred. People may hold folk theories about social processes such as the mental states of others (Malle, 1999), as well as physical and structural systems (Gelman & Legare, 2011). People often rely on their folk theories to understand and make inferences about their social worlds, which then can shape their subsequent behaviors in the relevant domain (Hong et al., 2001). For example, a child who observes that pressing a button on a remote turns on the television may develop the folk theory that the remote controls the TV. She may then act on this folk theory by pressing buttons on the remote until the TV turns on. Despite not knowing the full mechanistic details behind how TV remotes work (transmitting signals of infrared light to the TV receiver), her awareness of and experiences with the system led her to develop a working folk theory that helped her accomplish her goal of turning on the TV (Bucher, 2017; DeVito, 2021). Due to their role as a meaning system and guiding framework for interpretation and prediction, once developed folk theories are generally held stable and maintained across time, although folk theories can be updated with new information or experiences (DeVito et al., 2018).

Folk Theories of Cyber-Social Systems

More recently, the framework of folk theories has been applied to the study of cyber-social systems, broadly defined as “digital technologies that facilitate, enhance, and scale human endeavors” (French & Hancock, 2017). Within this digital context, researchers have argued that folk theories inform not only how people learn about complex media systems and algorithms (through their own experiences, knowledge of the platforms, information from others, etc.; Bucher, 2017), but also how they think about, behave on, and react to such systems (DeVito, 2021). Research on folk theories of cyber-social systems so far has mainly focused on identifying the various folk theories that people hold about social media platforms such as Facebook, Twitter, and Instagram (DeVito et al., 2018; French & Hancock, 2017). For example, some users believe that the Facebook Newsfeed acts as a rational assistant that understands and caters to their social media interests, while other users believe that the Facebook Newsfeed acts as an unwanted observer, using their personal data for corporate gain (French & Hancock, 2017).

Further research has investigated how the folk theories people hold can guide their behaviors on and thoughts about various social media platforms. For example, users who hold the folk theory that personal engagement (e.g., liking and commenting on posts) increases the visibility of certain types of posts on their Facebook Newsfeed may be more likely to interact with some posts than others (Eslami et al., 2016). When the underlying algorithms change however, users can experience expectation violation and frustration as their working folk theories become nonfunctional, reacting in particular to the parts of the system that no longer correspond to their own individual folk theories (DeVito et al., 2018). Consequently, the folk theories that people hold about a cyber-social system not only inform their beliefs about how the system works, but also shape how they use the system to accomplish goals and how they respond when the system changes and their actions no longer result in the expected outcomes.

Folk Theories of Online Dating

Like social media platforms, online dating platforms can be classified as a type of cyber-social system. Initial work investigating people’s conceptualizations of online dating described a marketplace metaphor, termed “relationshopping,” which can be thought of as a folk theory of online dating (Heino et al., 2010). These folk theories can have important consequences. For example, with the increase in “supply” of potential partners available through online dating, participants who subscribed to a “relationshopping” folk theory used decision-making strategies that differed from traditional dating strategies. One such strategy was “filtering,” in which participants “shopped” for partners by using the search or filter functions of online dating websites, narrowing down the number of partners to those that fit their idiosyncratic criteria. These data suggest that folk theories of online dating can impact dating strategies and behaviors when seeking a romantic partner.

More recently, Sharabi (2021) examined how beliefs about the effectiveness of online dating algorithms influenced perceptions of a first date. Participants who believed that the algorithms were effective in providing compatible matches engaged in more pro-relationship communication behaviors and were more likely to report greater first date success, suggesting that people’s beliefs about the algorithms that may influence online dating behaviors and outcomes more so than the actual algorithms themselves. Interestingly, most participants in the study appeared to be unaware of algorithmic influences in online dating platforms.

From this prior research, three interesting research questions arise: First, while previous research on folk theories of cyber-social systems has focused mainly on people’s conceptualizations of the algorithms behind these systems, prior work examining online dating folk theories (Heino et al., 2010) suggests daters are focused less on the algorithms underlying the online dating systems and more on online dating as a social process. That is, online dating requires users to create profiles, make mate-selection decisions, exchange messages, and eventually go on in-person dates. As many online dating platforms guide users through this same progression of stages in the online dating process (see Markowitz et al., 2019), online dating entails the activation
of many psychological and relational processes throughout the initial acquaintance stages. Thus, it is likely that people’s conceptualizations of online dating may center on these processes, as opposed to the specific cyber-social system being used. This leads to our first research question:

**RQ1.** What are people’s folk theories of online dating as a social process?

Second, while people’s conceptualizations of online dating appear to be more focused on the social process rather than the underlying algorithms, what (if any) conceptualizations of the algorithms do people have? Online dating services often advertise their algorithm’s (supposed) ability to match online daters with compatible others (Finkel et al., 2012). However, the exact factors used to determine compatibility are often treated as corporate secrets, leaving substantial ambiguity about how the algorithms work. Indeed, people may not even be aware that an algorithm is being used to curate matches (Hamilton et al., 2014). For those who are aware, their beliefs about the algorithms may shape their subsequent online dating behaviors and outcomes (Sharabi, 2021). This leads to our second research question:

**RQ2.** What are people’s folk theories about the algorithms in online dating systems?

Finally, how do online dating folk theories compare with folk theories of “traditional” in-person dating? We use Finkel et al.’s (2012) definition of conventional offline dating to define traditional dating as “the myriad ways that people meet potential romantic partners in their everyday lives through non-Internet activities—through their social network, a chance face-to-face encounter, or some combination of the two” (p. 7). The concept of using folk theories or metaphors to describe traditional dating is not new (“love as a journey,” Baxter, 1992; Lakoff, 1986), yet the conceptual overlap and distinctions between folk theories of traditional and online dating have yet to be explored. For example, traditional daters also report using certain “metrics” (e.g., the number of compliments received) to determine their own desirability or “market value.” Although no overt search tool or filter function can be seen in traditional dating, daters still select partners based on their preferred idiosyncratic characteristics during the initial stages of a relationship (Eastwick et al., 2014), mentally filtering out those who do not meet their criteria.

Uncovering whether people hold fundamentally different ideas about the online (vs. traditional) dating process is important given the mixed opinions that people hold about the impacts of online dating on the broader dating environment. Despite its growing ubiquity, many people still believe that online dating has made it more difficult to form meaningful connections and that traditional dating is inherently better and more personal compared to online dating (Anderson et al., 2020). Existing popular stereotypes continue to frame online daters as individuals who are only searching for casual sex, unable to form meaningful connections or lasting relationships—however, it is unknown whether this is actually the case. If online daters hold similar folk theories for dating in both online and traditional contexts, this could suggest that they treat both forms of dating the same way psychologically and engage in similar relationship initiation strategies regardless of the context. However, if daters hold distinct folk theories for each context, this could suggest that relationship initiation strategies may be context-dependent. Alternatively, given that traditional and online dating processes can be thought to converge after the first in-person date, folk theories of traditional and online dating may be similar or different depending on the stage of relationship initiation that daters choose to focus on. This would suggest that folk theories (and relationship initiation strategies) are context-dependent only during the very beginning stages of relationship initiation, before partners meet for a first date. This leads to our third research question:

**RQ3.** How do folk theories of traditional dating compare to folk theories of online dating?

We investigate these research questions across two mixed-method studies, beginning with a survey in Study 1 to identify the many different folk theories people hold about online dating. We then move to interviews in Study 2 to explore further people’s folk theories of online dating as a social process, their beliefs about online dating algorithms, and similarities and differences between their folk theories of traditional and online dating. This mixed-methods approach allowed us to not only capture a broad range of folk theories on online dating, but also allowed us to understand in-depth how people make sense of, feel about, and react to the folk theories that they hold. Following previous research on folk theories of relationship development (Baxter, 1992) and cyber-social systems (Eslami et al., 2016; French & Hancock, 2017), we used a metaphor approach in both studies. The use of metaphoric analogies helps people understand abstract or unfamiliar constructs by scaffolding them in concepts that they are already familiar with, and this process of using metaphors to organize our conceptual systems comes naturally (Lakoff & Johnson, 1980). With cyber-social systems in particular, people may form expectations and folk theories of how new systems function based on their knowledge of more familiar systems or social processes (e.g., online dating as a marketplace; Heino et al., 2010; Eslami et al., 2016). Following prior theory, we applied the metaphor approach as it would be intuitive for participants and would allow us to tap into the folk theories that the metaphors represent.

**Study 1**

In Study 1, we were interested in collecting a broad range of metaphors to discern daters’ perspectives on online dating
and to extract the key folk theories underlying these metaphors. We recruited participants and had them complete a novel crowdsourcing wiki-survey task to elucidate all possible metaphors of online dating. The first and second authors then used grounded theory (Charmaz, 2006) to develop a coding scheme and coded the metaphors. We then performed content analysis (Neuendorf & Kumar, 2016) to identify key themes within the metaphors.

Method

Participants

Participants (N=1,669) were recruited from Amazon’s Mechanical Turk (n=1,301) and from the student subject pool at Wayne State University (n=368). MTurkers received US$0.75 and students received 0.5 extra credit for their participation in the study. Selection criteria required that all participants be above 18 years (range=18 to 55), living in the United States, and have some personal experience with online or mobile dating systems. Ethical approval for this study was obtained from Wayne State University’s IRB.

Procedure

All Our Ideas Wiki-Survey. Participants completed a collaborative voting task modeled after Study 1 from French and Hancock (2017). Participants visited a wiki-survey website (All Our Ideas, http://www.allourideas.org, Salganik & Levy, 2015) where they were presented with a pair of metaphors. They were instructed to “vote for the metaphors which you think best represent your beliefs of online dating.” In the wiki-survey, participants were presented with two metaphor options at a time and had various responses to choose from; they could either (1) vote for one of the two options, (2) indicate that they cannot decide between the two, or (3) submit their own metaphor in a separate field. Each option included the metaphor and a one-sentence summary explanation (see Table 1). The two metaphors presented in each voting round were randomly chosen by the All Our Ideas platform from a master list, which was initially seeded with 18 metaphors developed by a team of five research assistants who had firsthand experience and knowledge of online and mobile dating (see Supplemental Material). If participants submitted an original metaphor rather than cast a vote for the existing options, their metaphors were added to the database and presented to future participants to vote in subsequent rounds of voting. Participants were asked to vote at least 10 times but could vote as many times as they wished.

Due to the large volume of metaphors submitted and voted on, the following decision rules were developed to determine the final list of metaphors: (1) metaphors must have a win-to-lose ratio greater than 1 (i.e., must have more winning votes compared to losing votes; calculated as number of wins divided by number of losses), (2) metaphors must have a winning rate greater than 50% (calculated as number of wins divided by total number of overall votes), and (3) metaphors must have a number of total votes that is comparable to the rest of the metaphors in the sample (e.g., a metaphor that only received 50 votes when all other metaphors received 800 or more votes would be dropped from consideration).1

Content Analysis. Once the final list of winning metaphors was compiled, the first author used grounded theory (Charmaz, 2006) to inductively identify themes within the metaphors and then discussed these themes with the second author. Once the first and second authors agreed on coding schemes for the metaphors, all authors then individually coded the metaphors from the final list. Interrater reliability was acceptable (Krippendorff’s α = .67); we proceed with exploratory interpretations.2

Results and Discussion

All Our Ideas Wiki-Survey

The wiki-survey task resulted in a total of 49 winning metaphors. The top 10 metaphors, in terms of winning rate, were “a roller coaster,” “hide and seek,” “a hookup app,” “casually browsing,” “a radio,” “an audition,” “bingo,” “a game of darts,” “a farmer’s market,” and “a flea market” (see Table 1 for descriptions of the top 10 metaphors and the Supplemental Material for the full list). Nine of the top 10 metaphors and 35 of the 49 total metaphors were user-submitted, supporting the theoretical value of crowdsourcing and participatory research (French & Hancock, 2017).

Within the top 10 metaphors, some key themes emerged. A few of these metaphors discussed online dating as a social process (e.g., “Hide and seek: you never know who you’ll find until you properly search.”), addressing RQ1. Some metaphors hinted at elements of randomness and luck inherent in online dating (e.g., “Bingo: When a random, magical and lucky combination aligns you win your soulmate”) and this was apparent in metaphors that likened online dating to browsing an open marketplace as well (e.g., “A farmer’s market: a gathering of people from all walks of life, looking to relax, enjoy themselves & perhaps find something good”). Only one metaphor in the top 10 directly addressed the platform’s algorithmic influence on the online dating process (“A hookup app: seeks physical compatibility between two people”). These results suggest that people can and do form folk theories of online dating and that these theories focus on the social process more than the algorithms underlying the platforms. It may also be possible for people to hold multiple folk theories at once (i.e., folk theories are not necessarily exclusive of each other; an individual could believe that online dating is both like “hide and seek” and “an audition”).

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Content Analysis

From the content analysis, we identified six themes (Table 2). Like the findings for the top 10 metaphors, a majority of the themes that emerged focused on the social process of online dating rather than the algorithms that underlie the platforms. Elements of effort and luck (e.g., active effort/search, min-maxing, uncertainty/luck) appeared in the metaphors, suggesting that participants believed that online daters need to actively put in effort to find and evaluate potential partners, but that even with effort, some luck may also be needed for finding compatible partners (RQ1). Interestingly, some themes emerged that discussed the impact of the online dating system on the social process of dating, separate from the algorithms that underlie the platforms. Participants noted that online dating made the initial stages of the social process easier by increasing their access to potential partners within their area (e.g., pool). The process of online dating itself, to some, felt like a game or a hunt and provided a source of entertainment. There were few themes that touched upon the algorithms, however the ones that did were generally positive, likening the algorithm to helpers that assisted with matching online daters to compatible partners (RQ3).

Table 1. Top 10 Metaphors from All Our Ideas Wiki-Survey.

| Metaphor | Source | W/L ratio | Win % |
|----------|--------|-----------|-------|
| 1. A roller coaster: Sometimes there’s ups, downs, twists, and turns, and you either return to the station satisfied or horrified. | User | 1.89 | 65 |
| 2. Hide and seek: You never know who you’ll find until you properly search | User | 1.85 | 65 |
| 3. A hookup app: Seeks physical compatibility between two people | User | 1.84 | 65 |
| 4. Casually browsing: No commitments, if you don’t like something, put it back on the shelf | User | 1.81 | 64 |
| 5. A radio: You turn from station to station, hoping to find something that catches your interest or makes you feel something | User | 1.78 | 64 |
| 6. An audition: You put yourself out there, hoping someone will find you appealing | User | 1.72 | 63 |
| 7. Bingo: When a random, magical and lucky combination aligns you win your soulmate | User | 1.69 | 62 |
| 8. A game of darts: Not every target you hit is going to be a bullseye | User | 1.68 | 62 |
| 9. A farmer’s market: A gathering of people from all walks of life, looking to relax, enjoy themselves & perhaps find something good | User | 1.64 | 62 |
| 10. A flea market: Some of the finds may be junk, yet other items may become a lifelong treasure | Seed | 1.72 | 61 |

Note: W/L ratio is calculated as the number of wins divided by the number of loses. Win % is calculated as the number of wins divided by the total number of votes (wins, loses, and “I can’t decide”).

Table 2. Study 1: Metaphor Themes, Definitions, and Examples.

| Theme | Definition | Examples |
|-------|------------|----------|
| Uncertainty/luck | Elements of luck and uncertainty | Sometimes there’s ups, downs, twists, and turns, and you either return to the station satisfied or horrified. When a random, magical, and lucky combination aligns you win your soulmate. |
| Active effort/search | Actively putting in effort and work to accomplish goal; necessity of actively doing something to achieve goal | You never know who you’ll find until you properly search. You search for a long time to find something rare and valuable. |
| Matching | An outside system or person helps identify compatible matches | It sees the compatibility between two people and is able to suggest the best fit for a date, or even a marriage. It is a personal attendant that serves you dater’s information and facilitates your interactions with them. |
| Min-maxing | Comparing products to maximize benefits for self; only pick items that one finds valuable | No commitments, if you don’t like something, put it back on the shelf. Each dater is comparing different products to select the one that best fits their needs and desires. |
| Pool | Access to a large number of single people in the area | A gathering of people from all walks of life, looking to relax, enjoy themselves and perhaps find something good. A place where there are many sections for dates for a wide variety of tastes. |
| Other | Something else not listed here | – |
Why were participants’ metaphors generally more focused on the social process relative to the algorithms involved in online dating? One possible reason is that participants may believe that the algorithms perform no better than luck or chance (as the above metaphors suggest) and therefore focus instead on the aspects of online dating that they have control over. Alternatively, participants may be unaware of the algorithms or the extent to which these algorithms influence their online dating experiences (Hamilton et al., 2014; Tong et al., 2016) and have not incorporated the algorithms or platform features into their folk theories.

Study 2

Study 1 addressed our first two research questions about what folk theories people held about online dating as a social process and about online dating algorithms using crowdsourcing and quantitative methods. While we asked participants about online dating specifically, many of the metaphors could arguably describe traditional dating as well. For example, the metaphor “Hunting: searching for and pursuing someone of romantic interest” could be as easily applied to traditional dating as to online dating (and in fact has been elicited in past research on metaphors of traditional dating; Aksan & Aksan, 2010). Thus, a remaining question is: What are current-day folk theories of traditional dating and how do they compare to folk theories of online dating?

In Study 2, we conducted interviews with online daters to examine how people conceptualize dating in the modern era and the role that online dating plays in shaping their experiences and outcomes. The interviews allowed us to capture not just what folk theories people held about online dating, traditional dating, and online dating algorithms, but also how they make sense of, feel about, and react to them (Bucher, 2017).

Method

Participants

Participants (N=13, 4 males, 9 females) were volunteers and undergraduates recruited from social media and Stanford University. Undergraduates who completed the study received credit for course requirements. Participants were 22.85 years old on average, ranging from 19 years old to 27 years old. Ethical approval for this study was obtained from Stanford University’s IRB.

Procedure

Participants were interviewed individually by the first author or a research assistant. Interviews lasted 40 minutes on average and followed a protocol developed using findings from Study 1 (see Supplemental Material). The protocol provided a semi-structured guide for the interview that allowed the interviewer to probe further at topics salient to the discussion at hand. The interview contained four parts: (1) traditional dating, (2) online dating, (3) online dating algorithms, and (4) comparisons between traditional and online dating. In parts 1 and 2, participants were asked to define what traditional/online dating meant to them, describe the process of traditional/online dating (from first meeting to forming a relationship), and share their opinions on traditional/online dating. Participants then were asked to come up with and elaborate on a metaphor for traditional/online dating. For part 3, participants were asked to think about online dating platforms that they have used in the past and discuss how those online dating platforms affected their dating experiences, whether they were aware of algorithms being used to curate the profiles they viewed, what inputs they thought the algorithms might take into consideration, and how effective they thought the algorithms were in providing compatible matches. Following parts 1 and 2, they then came up with and elaborated on a metaphor for the algorithms. Finally, participants were asked to compare traditional dating to online dating. At the end of the interview, participants answered demographic questions and were debriefed.

Data Analysis

Interviews were digitally recorded and then transcribed by undergraduate research assistants. The data were analyzed using both extended case method (Burawoy, 1998) and grounded theory (Charmaz, 2006) approaches to understand how participants’ individual experiences shaped their folk theories and the general themes that arose across interviews. Per extended case theory, we began our analyses by using the findings from Study 1 as an initial guiding framework. When we came across observations that were insufficiently explained by this initial framework, we then took an inductive, grounded theory approach to further identify common themes and patterns across the interviews. To conduct the analyses, the first author read through each interview transcript and identified common themes that appeared within the data. The second and third authors then examined the data and recommended suggestions for adjusting and fine-tuning the themes until a consensus was reached. The combination of these two approaches and the iterative discussions resulted in a more complete understanding of participants’ perceptions of traditional dating, online dating as a social process, online dating algorithms, and their relevant folk theories.

Results and Discussion

From the interviews, it was clear that participants held strong opinions about both traditional and online dating. Several themes emerged for both, while some unique aspects were identified for each context.
Converging Folk Theories for Traditional Dating and Online Dating

Across the interviews, two folk theories emerged for both traditional and online dating: (1) *shopping* and (2) *chance and randomness*. Echoing previous work on marketplace metaphors (Ahuvia & Adelman, 1993; Heino et al., 2010), participants described both traditional and online dating as *shopping*. When *shopping*, participants browse the “inventory” of “items” (i.e., partners) to pick one that catches their eye. Once they have selected an item, they can then try it out (i.e., go on a date) to determine whether it matches what they are looking for. One participant explained in her metaphor of purchasing shoes, “You can’t figure out which shoes feel good if you just look at them, you have to put them on and give them some trial and error in the real world a few times” (P07). If participants decided that the item was a good fit, they would then keep the item (i.e., continue pursuing a relationship with the partner); if it was not a good fit, they could return it (i.e., terminate the relationship).

For traditional dating, *shopping* centered around getting to know a potential partner. The initial meeting and dating phase served as a crucial information-gathering opportunity for participants to establish whether they saw relationship potential. For online dating, *shopping* centered on browsing profiles and matching. While participants compared traditional dating to shopping inside of a store, they thought of online dating as “window shopping” and “online shopping.” Online daters can browse through a catalog to see all products that are available, access individual summary information for each product, and make decisions based on the limited information. All online daters have access to the same catalog—multiple daters can “see, check out, and return the same [products]” (P01). Compared to the “inventory” available through traditional dating, the online dating “catalog” provides a larger range of items and therefore “more choice.” Being able to see the contents of the catalogue gave some participants hope, “Constantly seeing people coming in and out, so you know there’s people there . . . it isn’t hopeless” (P04). For others, however, browsing could become a waste of time, “Sometimes, you can spend all day window shopping but not actually buy anything, and I think that’s what a lot of people do on Tinder . . .” (P09).

The second folk theory that emerged from the interviews for both traditional and online dating was *chance and randomness*, echoing our findings of *uncertainty/luck* in Study 1. While *shopping* imbued a sense of purpose and control over the dating process, participants who held the folk theory of *chance and randomness* expressed frustrations with their dating experiences. For traditional dating, participants came up with metaphors such as “particles out in the dark,” “endless ocean,” and “going on an unplanned trip.” They voiced discouragement and a lack of control over the traditional dating process, particularly during the initial stages. One participant (P03) explained, It’s kind of passive. Just going about your own life and path, can’t really do anything about it. . . . It’s kind of out of your control. Feels a lot more based on circumstance.

Participants who had graduated from college and joined the workforce rarely met new people outside of their established social groups and found it difficult to seek out potential partners. To these participants, traditional dating was a black-box process that happened only when circumstances unexpectedly facilitated it; any active efforts on their own parts were viewed as futile.

The theme of *chance and randomness* also appeared in participants’ folk theories of online dating, but more as a *numbers game* instead of exploring unknown territory. Participants noted that there were “a lot of different [people]” on online dating apps and this had both pros and cons. One participant (P05) explained,

> When people say it’s a numbers game in terms of probability, it makes it harder to meet someone you would be in a successful long-term relationship with, because you might miss out on them in the sea of everyone else on the app. On the other hand, it does expand your network and gets you outside your comfort zone a little bit just to meet new people and more people which is very helpful for me.

This ability to meet many potential partners outside of one’s own network was viewed as a major boon; however, the large number of people on the online dating site could become overwhelming (Tong et al., 2016), and the fear of missing out on “the one” due to having to browse through so many profiles was common. One participant described this experience as “trying to find a needle in a haystack” (P11).

Folk Theories Unique to Traditional or Online Dating as a Social Process

In addition to the two shared folk theories, we identified two folk theories unique to traditional dating and one unique to online dating. The presence of these folk theories suggests that although there is some overlap between people’s conceptualizations of traditional and online dating, there are also some core distinctions.

Traditional Dating

Several participants proposed the folk theory of *movies*, where two people “first meet up and it’s instant chemistry, and you’re almost willing to get down on one knee at that point” (P06). The *movies* folk theory captured a view that traditional dating should come almost effortlessly as people amble about in their daily lives. Although participants viewed traditional dating as the ideal way to meet a romantic partner, they expressed frustration with how it “does not come as naturally as it seems in the movies” (P05). The fact that these
moments that are prevalent in movies did not occur often in real life led to a disillusionment with traditional dating, with one participant speculating that the rise of hook-up culture could be attributed to the unrealistic expectations that popular media set about traditional dating (P05).

The second unique folk theory that emerged for traditional dating was nurturing. Nurturing included metaphors such as “taking care of a seeded plant” and “slow cooking.” Like shopping, nurturing focused on the dating (vs. initial meeting) phase of traditional dating. Participants emphasized the idea that relationships take time and effort to grow, with the caveat that not all relationships will successfully develop. Nurturing holds that only by actively investing in the relationship can daters build an emotional connection. As one participant commented, “It is a long process, it takes time” (P12).

Online Dating

The unique folk theory that emerged for online dating was game—a metaphor which had also appeared in our findings from Study 1. Participants who held this folk theory explained how the simplified process of meeting partners (profile viewing, swiping) and overall convenience made online dating more approachable, yet the intangible nature of interacting with partners without being able to see them made the initial stages of online dating feel artificial:

On websites like Hinge, their bios are more of snippets, not even full sentences, so I think it’s about how you catch someone’s attention and that’s a game in and out of itself. And I think the swiping action is also something people like because it’s fun and makes it feel more like a phone game you play. (P09)

Folk Theories for Online Dating Algorithms

While participants had little trouble coming up with metaphors for traditional dating and online dating as a social process, most participants struggled to come up with a metaphor for online dating algorithms. When specifically asked for their opinions on the algorithms, most participants acknowledged that some algorithmic processes existed, but could only make “wild guesses” (P11) and “speculations” (P03, P10) as to how they worked. From these speculations, three main folk theories emerged: filter, personalized advertisements, and brackets.

The first, filter, included metaphors such as “funnel,” “matchmaker,” “personal shopper,” and “gold sifter.” According to this folk theory, online dating algorithms act as a filter, sorting out the most compatible profiles for daters. Some participants believed that the more information one supplies to the algorithm, the better it can “narrow down the pool” (P09), while others believed that some back and forth between the dater and the algorithm was needed to improve the algorithm’s effectiveness in providing compatible profiles.

The second folk theory, personalized advertisements, included metaphors such as “Amazon advertisements,” “puppeteer,” and “past shopping results.” While filter emphasizes the use of individuals’ preferences to narrow down the pool, the personalized advertisements folk theory held that daters’ past behaviors influenced the algorithm’s suggested matches, in a “because you looked at this, you might like this” (P07) fashion. Like a puppeteer, the algorithm works “behind the scenes” (P11), observing the dater’s swiping habits to determine trends the dater prefers, which is then used to predict which profiles the dater might like. “The algorithms are the recommended [profiles], whereas the actual dating is me searching for something, clicking on something, more intentional choices on my behalf” (P07).

One participant (P11), however, wondered if this was just an illusion of control:

It seems that someone is there at every step of the process and pushing you along or having control over the decisions you are able to make, because they have control over the possible decisions you can choose from. So it definitely feels like there is someone behind the scenes controlling it all.

The final folk theory for online dating algorithms was that of a bracket system. This folk theory reflected elements of the matching hypothesis (Sprecher & Hatfield, 2009) in that participants hypothesized that the algorithms assign daters to specific brackets based on their attractiveness and display to them profiles of other daters who are within the same bracket, with the assumption that daters would be best suited to partners with a similar level of attractiveness. Under this folk theory, daters assumed that they were initially assigned to a random bracket, then moved up or down as other daters liked or rejected them. Receiving many likes would increase one’s attractiveness score, whereas receiving many rejects would decrease one’s score. This initial calibration would then result in assortative mating, where daters would only see profiles with similar levels of attractiveness.

Despite holding these various folk theories about how online dating algorithms work, participants had mixed feelings about having an algorithm govern their dating lives. Some participants questioned the effectiveness of algorithms in determining compatibility and filtering out less compatible matches (“If it was really super effective, I would have a higher percentage of wanting to swipe right more than just 1 in 15”; P03). A few also commented that having an algorithm define compatibility and attractiveness felt unnatural (“should a computer really decide for me what I like and don’t like?”; P03) and could potentially perpetuate harmful biases by “catering towards certain negative stereotypes” (P07). Other participants were more ambivalent about algorithmic influences in online dating platforms (“algorithms underlie every other app that I use on my phone so I don’t have a problem with it being on an online dating app either”; P11), explaining that “since we have that big data out there,
we might as well use it to make things go more smoothly” (P05). One participant commented, “If [the algorithms] can tell what I like better than I can, then more power [to them]” (P04).

**General Discussion**

Across two mixed-method studies, we identified and examined the various folk theories that people hold about traditional dating, online dating, and online dating algorithms. Our findings provide insights into how daters make sense of traditional and online relationship development processes as well as the algorithms that underlie online dating platforms. Study 1 took a quantitative approach, crowdsourcing metaphors to identify folk theories of online dating and their underlying themes. Study 2 took an in-depth, qualitative approach, probing deeper into the folk theories that daters hold to understand how each one operates and how daters make sense of their dating experiences. Through our interviews, we identified one folk theory unique to online dating (game), three folk theories of online dating algorithms (filter, personalized advertisements, bracket), two folk theories unique to traditional dating (movies, nurturing), and two folk theories that overlapped between traditional and online dating (shopping, chance and randomness).

Our first research question asked what folk theories people hold about online dating as a social process. Our results from Studies 1 and 2 suggest that there are multiple folk theories for online dating. When prompted to come up with a metaphor, almost all participants focused on online dating as a social process, drawing upon their prior experiences and knowledge of online dating to formulate their metaphors. Participants in Study 2 uniquely described the online dating process as a game, highlighting the computer-mediated acquaintance stages of relationship formation (e.g., browsing profiles, matching, messaging) unique to online dating (Finkel et al., 2012).

Results from Study 2 suggest that some of the folk theories people hold overlap both online (RQ1) and traditional dating (RQ3). Our data support prior research on the marketplace metaphor (Ahuvia & Adelman, 1993) and its extensions from traditional to online contexts (Heino et al., 2010). Importantly, we find that different aspects of the shopping folk theory are emphasized depending on whether it is applied to traditional or online dating, suggesting that even when folk theories overlap across contexts, certain aspects may still be context-dependent. Surprisingly, unlike in past research, participants did not particularly emphasize a desire to find an especially compatible partner when describing shopping in their interviews. Instead, they focused on their own ability to choose partners and the steps inherent in this process, invoking aspects of the active effort theme identified in Study 1.

The themes of uncertainty, luck, and randomness also appeared for both traditional (Study 2) and online dating (Studies 1 and 2) but had some key context-dependent distinctions as well. For traditional dating, chance and randomness represented a more abstract notion of luck outside of a dater’s control. Whether one met a potential partner who happened to be single felt more up to chance than any purposeful action by the dater. Chance and randomness in online dating reflected a more probabilistic concern, where daters worried about finding an especially compatible partner amid the large pool of potential partners. The ability to choose from a large pool had both advantages (e.g., sense of autonomy and self-determination) and disadvantages (e.g., decision paralysis). Although participants elucidated this folk theory in the context of online dating as a social process, the design of the online dating system and the types of algorithms involved could potentially drive the degree to which participants hold this folk theory (Tong et al., 2016). These context-dependent distinctions highlight the value of diving deeper into participants’ folk theories to understand how they manifest and operate.

Our second research question asked what folk theories people hold about the algorithms underlying online dating systems. The three folk theories we uncovered in Study 2—filter, personalized advertisements, and bracket—varied in what inputs (e.g., preferences, past user behavior) the algorithm considered, the outputs (e.g., profiles shown) that the algorithms produced, and the amount of personal control participants perceived over their dating decisions. The seamless designs of these algorithms (Hamilton et al., 2014) as well as the various user-facing designs of online dating systems (Tong et al., 2016) may obscure the algorithms’ influence in profile curation and make it difficult for participants to pinpoint how the algorithms work, resulting in the various folk theories captured in our studies. Participants did not particularly believe in the efficacy of the algorithms in providing especially compatible matches but were not opposed to the idea of being matched by an algorithm if the algorithm could improve their likelihood of relationship success (Sharabi, 2021).

Our final research question asked how people’s folk theories of traditional dating compared to their folk theories of online dating. In addition to the two overlapping folk theories, we found two folk theories unique to traditional dating. Movies reflected a growing tension between perceptions of traditional versus online dating. Online dating has become the most popular way to meet romantic partners (Rosenfeld et al., 2019), yet daters still hold onto prior societal perceptions of traditional dating as the most desirable way to find a romantic relationship. Daters now must reconcile their idealized expectations of traditional dating with their actual experiences in traditional and online dating.

The nurturing folk theory also replicated and combined elements of two folk theories of (traditional) relationship development identified in prior research (Baxter, 1992): that relationships take (1) effort from both partners (work-exchange) and (2) time to grow a strong emotional bond that
continues developing as the relationship progresses (journey-organism). The replication of Baxter's (1992) findings suggests that people's core conceptualizations of romantic relationship development have remained stable, even as online relationship initiation and maintenance have become more popular over the past few decades.

A major contribution of this study is uncovering the need to delineate folk theories of technologically mediated social processes from the ones people hold about the algorithms that underlie or facilitate those processes. Our results made clear that participants' conceptualizations of online dating—and dating as a social process more generally—differed substantially from their conceptualizations of how online dating algorithms work. Future research interested in folk theories of cyber-social systems should consider addressing the social processes that the cyber-social system enables separately from the algorithms that underlie these systems. In addition, if the social process under study has an offline counterpart (e.g., online vs. traditional dating, online vs. offline interactions), our results suggest that researchers should not assume the folk theories that people hold for both processes will be the same.

Finally, the various folk theories people held for traditional and online dating also focused on different stages of a relationship's trajectory (e.g., chance and randomness focused on meeting potential partners, whereas nurturing focused on developing a relationship). Extending Baxter's (1992) ideas on folk theories of traditional dating, people may hold different folk theories depending on the stage of the relationship's development, even if these stages are dictated by technological design. Claiming that any single folk theory encompasses an entire social process may be misguided and suppress a complete understanding of how users make sense of their experiences (Baxter, 1992). Instead, this perspective suggests that the variety of folk theories about a process indicates not only differences in conceptualizations about the process, but also distinctions in the stages of the process itself. Users may be fluid in the folk theories they hold, switching folk theories to better accommodate their shifting needs as their relationship develops, or as they progress through the stages of a social process. The malleability of folk theories may be a function of both new experiences (DeVito et al., 2018) and the stage(s) of the social process that people experience. Future research should consider these factors when studying folk theories of social processes inherent in cyber-social systems.

We conclude by noting some limitations of the present research. For Study 1, we primarily recruited participants through Amazon's Mechanical Turk, leading to a potentially more diverse (compared to an undergraduate population) but also potentially more inattentive and dishonest sample (Buhrmester et al., 2018). Also, while we were able to glean novel insights from participant-submitted metaphors on the collaborative wiki-survey platform (compared to the more typical format of closed survey questions with researcher-defined constraints; Salganik & Levy, 2015), the nature of the wiki-survey meant that latter participants had more options to choose from compared to previous ones (due to submissions of metaphors from earlier participants) and this could have influenced voting behaviors.

A limitation of Study 2 was the college-aged range of our sample. While we were able to reach saturation within our sample, a more varied sample comprised younger and older daters may reveal a greater range of folk theories. Adolescents who spend a significant amount of time online (Orben & Przybylski, 2019) may be more accustomed to the idea of meeting partners online and may be more aware of algorithmic influences within dating platforms. Older generations may hold different folk theories of traditional dating and their limited use of technology (including dating platforms; Renaud & Van Biljon, 2008) may make them less aware of algorithmic influences. These factors could result in different folk theories for traditional and online dating processes and algorithms.

Finally, we note that while the use of metaphors provides an intuitive and accessible method of tapping into participants' folk theories (Eslami et al., 2016; French & Hancock, 2017; Lakoff & Johnson, 1980), metaphors can introduce a level of complexity for identifying shared meanings and conceptions as they are indirect, culturally specific, and potentially ambiguous. Future research should consider using additional methods that do not rely on metaphors (such as concept mapping) to study folk theories. Future research should also investigate how people's motivations for traditional or online dating may shape the folk theories they hold, and how folk theories of relationship development and of online dating algorithms affect relationship initiation strategies, behaviors, and outcomes.

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Supplemental Material
Supplemental material for this article is available online.

Notes
1. User submissions that met these decision criteria but did not match the submission instructions or content (e.g., “most of the people on tinder are not people I’m interested in, simply because their using tinder”) were also dropped from consideration.
2. Krippendorff (2004) recommends $\alpha = .667$ as the minimum acceptable reliability for drawing tentative conclusions and $\alpha \geq .800$ for drawing stronger conclusions.

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