DOI: 10.1111/pere.12548

ORIGINAL ARTICLE



Virtual speed dating: Utilizing online-meeting platforms to study initial attraction and relationship formation

Juliana E. French^{1,2} | Lindsay J. Bolton¹ | Andrea L. Meltzer¹

Correspondence

Juliana E. French, Department of Psychology, University of South Florida, St. Petersburg, FL, USA.

Email: juliana.french@okstate.edu

Abstract

There is still much to learn about attraction and relationship formation. Here, we introduce an innovative method that utilizes modern technology to permit large-scale, observational study of dyadic behavior that may yield new empirical insights into how people choose partners and form relationships: virtual speed dating. In doing so, we provide a methodological overview of a recent virtual speed-dating study that we conducted, and we provide guidance for other scholars who wish to conduct such a study. Not only does virtual speed dating permit a feasible way to conduct large-scale speed-dating research and observe dyadic behavior during initial meeting and dating interactions, but it can benefit relationship science in myriad other ways, including the ability to (a) study novel research questions about first-impression formation, romantic rivalries, and affiliative behaviors, (b) study diverse types of relationships, and (c) increase representation of diverse individuals in relationship science.

Statement of Relevance: Given the increased reliance on technology for relationship formation, we developed a modern method that permits large-scale, observational study of dyadic behavior during initial meetings and subsequent dating interactions: virtual speed dating. Virtual speed dating promises to yield new insights into attraction and relationship formation and might increase the feasibility of studying diverse relationships. This new method has the potential to help advance knowledge and theory on close relationships.

© 2024 International Association for Relationship Research.

¹Department of Psychology, Florida State University, Tallahassee, Florida, USA

²Department of Psychology, University of South Florida, St. Petersburg, Florida, USA

KEYWORDS

attraction, dyadic behavior, relationship formation, speed dating

1 | INTRODUCTION

Technology and the Internet have transformed how people meet and form interpersonal relationships. Whereas people used to commonly meet romantic partners through means such as friends, family, shared interests, and physical proximity, online dating is increasingly becoming a common way people meet romantic partners (Rosenfeld et al., 2019). Indeed, recent estimates suggest approximately 52% of never-married US adults have used a dating site or app (Vogels, 2023), with approximately 25% of adults under 30 having used one in the last year and 10% of partnered adults having met their current partner online (McClain & Gelles-Watnick, 2023). Virtual speed-dating events are also readily available online, many of which are free and themed to help people find partners who share similar identities and interests. Given its increasing popularity, new research methods that capitalize on online technologies to study relationship formation are not only ecologically valid but may also hold the potential to glean new empirical insights into current gaps in our understanding of attraction and relationship formation.

The goal of this paper is to introduce virtual speed dating as a method for studying attraction and relationship formation. In pursuit of this goal, the remainder of this paper is divided into four sections. We begin by describing notable examples of current gaps in our understanding of relationship formation, and we highlight how virtual speed dating can potentially address these gaps given its feasibility and through permitting large-scale observation of dyadic behavior. We then provide a methodological overview of a virtual, longitudinal speed-dating study we recently conducted, and, in doing so, we offer step-by-step guidance for researchers who may consider conducting a similar study. Following that overview, we provide preliminary data from our virtual speed-dating study to demonstrate that our proposed methods perform at least as well as in-person speed-dating methods. Finally, we highlight additional ways that virtual speed-dating studies can advance relationship science, including increasing representation of diverse relationships and individuals as well as novel opportunities for studying important relationship processes (e.g., first-impression formation, romantic rivalries, affiliation).

1.1 | Advancing science on attraction and relationship formation

Virtual speed dating holds the potential to glean new insights into many ongoing questions central to relationship science—specifically those surrounding attraction and relationship formation. For example, what predicts initial romantic attraction? How do people decide to pursue a romantic relationship with a particular person over alternatives? Why do some early romantic connections develop into full-fledged relationships whereas others dissolve? Despite decades of research and resulting scientific progress, the processes that underlie initial attraction and relationship formation remain heavily debated (Conroy-Beam, 2021; Eastwick et al., 2014; Fletcher et al., 2020). As just one example, myriad empirical evidence (e.g., Fletcher et al., 1999, 2000; Gerlach et al., 2019; Overall et al., 2006) supports the ideal standards model (Fletcher et al., 1999)—a seminal model that considers people's specific partner preferences and applies

interdependence theory (Kelley & Thibaut, 1978) to suggest that fulfillment of those preferences should be associated with relationship quality; yet other work has challenged the extent to which such preferences predict initial attraction (Eastwick & Finkel, 2008). As another example, a robust body of work suggests people choose partners who are similar to themselves (e.g., Berscheid et al., 1971; McKillip & Redel, 1983; Shaw Taylor et al., 2011), yet other work has questioned the role that self-other similarity plays in initial attraction (Luo & Zhang, 2009; Montoya et al., 2008; Tidwell et al., 2013). Finally, we know even less about how relationships develop from initial dating encounters into committed relationships, suggesting a pressing need for more research examining early trajectories of relationship formation (Eastwick et al., 2019).

To advance knowledge on these and other complex issues in relationship science, relationship scholars have adopted some of the most rigorous methods including dyadic, observational behavioral, and intensive longitudinal research designs (e.g., daily diary, multi-year studies). Nevertheless, it can be prohibitively difficult to (a) recruit people prior to their initial dating encounters, (b) observe behavior during those initial dating encounters, and then (c) follow dyads through relationship formation (if they even form relationships). Indeed, others have highlighted such challenges inherent to studying the early trajectory of relationship formation and development (Eastwick et al., 2019). Speed-dating research has emerged as a valuable tool for overcoming some of these challenges (e.g., Finkel et al., 2007), though not without its own challenges and limitations. Indeed, the space requirements alone as well as the potential costs of securing a venue for hosting live speed-dating events may be barriers to many researchers who might wish to conduct such research. Modified speed-dating procedures may enable speeddating studies to be conducted in a laboratory setting (e.g., Li et al., 2013), though such studies necessarily yield smaller samples and thus fewer speed-dating interactions. Indeed, one such study included only 39 participants (Turowetz & Hollander, 2012), which is notably fewer than other speed-dating studies that included several hundred participants (e.g., Finkel et al., 2007; Overbeek et al., 2013).

Fortunately, technological innovation continually generates new methodological opportunities that have the potential to advance relationship science. For example, whereas some recent work has used people's online dating profiles to predict first-date outcomes (e.g., Sharabi & Caughlin, 2017), others have utilized computer-mediated communication methods to examine first-impression formation and initial liking (e.g., Sprecher, 2021; Sprecher & Hampton, 2017). Utilizing modern technology to conduct speed-dating research *virtually* not only increases the feasibility of conducting large-scale speed-dating studies but also comes with an additional and crucial benefit for relationship science: the ability to obtain observational data of dyadic behavior as it unfolds during initial dating interactions. Although some prior work has used such methods on a relatively small scale (e.g., Croes et al., 2020), the recent increased widespread popularity of online-meeting clients that feature cloud video-recording technology (e.g., Zoom) offers an unprecedented opportunity to conduct large-scale behavioral studies that can meaningfully advance scientific understanding of how dyadic *behavior* predicts initial attraction and subsequent relationship formation.

At its core, relationship formation is a behavior; because behavioral dynamics likely contribute substantially to people's perceptions and evaluations of potential partners, modern relationship science can stand to benefit from returning to the behavioral roots of social psychology (e.g., Latane & Darley, 1968; Milgram, 1963) by studying dyadic behavior during initial dating encounters. Video recording dyadic behavior and then later coding those videos is a gold-standard method in relationship science given such methods are relatively free from biases that plague self-report data (for a related discussion, see McNulty et al., 2021), yet these behavioral

methods are most often utilized to study established relationships (e.g., Markey & Markey, 2013; McNulty et al., 2021; Neff & Broady, 2011; Overall et al., 2009). Virtual speed dating can be used to obtain recordings of people's *initial* dating encounters that would permit coding of myriad observable behaviors that may predict attraction and subsequent relationship formation, including smiling, body language (e.g., leaning in, crossing arms), mimicry, self disclosures, and laughing. One recent study examined predictors of interpersonal liking (Dufner & Krause, 2023) by video-recording same-sex dyadic first encounters and coding communal behaviors (polite, benevolent, warm and friendly) and agentic behaviors (leading, dominant, confident, and boastful). Although this recent work did not examine dating outcomes, communal and agentic behaviors may also be important for attraction. Studying these and other behaviors may help shed new light on some of the existing gaps in knowledge on attraction and relationship formation, and virtual speed dating offers the newfound opportunity to feasibly obtain large-scale, observational data of such dyadic behavior during initial dating interactions to this end.

Thus far we have proposed that virtual speed dating can benefit relationship science by increasing the feasibility of conducting speed-dating research as well as permitting the ability to study dyadic behavior during initial dating interactions. Next, we (a) describe a large-scale virtual speed-dating study we recently conducted as an illustrative example of one way to conduct virtual speed-dating research and (b) offer methodological guidance for researchers who may consider conducting a similar study.

2 | METHODOLOGICAL GUIDANCE FOR CONDUCTING A VIRTUAL SPEED-DATING STUDY

Virtual speed dating involves people using online-meeting technology to date numerous potential partners in a brief time period. We recently conducted such a study that additionally included virtual longitudinal components to (a) capture people's first in-depth interactions with their matches and (b) assess the state of any newly formed relationships on a weekly basis.² In this section, we provide an overview of our methods and, in doing so, (a) describe some methodological considerations that are unique to *virtual* speed-dating studies³ and (b) illustrate one way to successfully conduct such a study.

2.1 | Participants and recruitment

2.1.1 | Methodological considerations

A unique benefit of virtual (versus in-person) speed-dating studies is that researchers can recruit from various populations (e.g., college students, local community, and geographically distant individuals). Consequently, the first issue to consider when planning a virtual speed-dating study is the target population—and this should be driven by the research question of interest. Researchers studying in-person relationship formation, for example, should limit their sample to local community participants who can later meet in person whereas researchers studying long-distance relationship formation can sample across a wide geographic area. Of note, such researchers may be able to draw their samples from Prolific or Amazon's Mechanical Turk. Relatedly, because virtual speed dating enables recruiting from populations outside

researchers' own local communities, a researcher based in a location with limited sexual diversity could host same-sex virtual speed-dating events for individuals residing in other regions with greater sexual diversity. To avoid confusion and oversampling, study advertisements should clearly communicate who the intended target population is and the type of relationship (e.g., long distance, local) participants might expect to form.

A second sampling issue to consider is how to maximize benefits to (a) participants (i.e., having the opportunity to meet several potential romantic partners) and (b) the scientific community (i.e., the scientific advancements the study yields). Such benefits would be reduced if, for example, a person enrolls in a study that aims to examine subsequent in-person relationship formation locally, but that person lives in a geographically distant location. Researchers should be aware that people outside of their target population may attempt to enroll in the study, and/or people seeking to enroll in the study may fabricate responses to eligibility screeners. Thus, to maximize benefits to participants and scientific advancement alike, researchers should proactively implement procedures that can identify eligible versus ineligible participants. Examples of such tactics include collecting institution-based email addresses for studies focused exclusively on college populations and verifying the zip code of residency for studies focused on local enrollment.

How we did it 2.1.2

We conducted our study at our local college campus as a means of conducting an initial test of this novel method, but, as we suggest above, this method can easily be adapted to communitybased or geographically distant populations. To recruit undergraduate and graduate students enrolled at our university who self-identified as any sexual orientation, we advertised (a) via fliers around campus, (b) via our university's weekly e-mail newsletter, (c) on several Facebook pages and groups, and (d) on a university-related subreddit page. Each advertisement included a link to the study's website, where interested individuals could learn more about the study and complete an eligibility screener that assessed whether they were (a) enrolled at our university by verifying their university-issued e-mail address, (b) single, and (c) willing to date via virtual speed dating. Interested individuals additionally self-reported their biological sex, gender identity, and whether they would like to date only/both men or/and women. All study procedures were approved by our university's institutional review board.

We recruited 330 participants (181 women; 149 men) who attended one of 17 virtual speed-dating events. In total, 76% (141 women; 109 men) were undergraduates who attended undergraduate-only events, and the remaining 24% (40 women; 40 men) were master's or doctoral students who participated in graduate-student-only events. Most participants (n = 312) attended one of 15 mixed-sex events, and 18 undergraduate women participated in one of two same-sex events. In our eligibility screener, some men indicated interest in dating other men, and some people indicated interest in speed dating both men and women; unfortunately, we did not have enough such participants to schedule any same-sex male or bisexual events. Our lack of diversity in sexual identity may be due to our study location (in the Southeastern United States), where sexual-orientation discrimination has historically been higher compared to other US regions (Cramer et al., 2017), and highlights the potential benefits of using virtual speed dating to recruit from geographic locations that offer greater diversity.

2.2 | Pre-event procedures

2.2.1 | Methodological considerations

Hosting virtual speed-dating events can be cost- and time-effective because there is no need to pay a venue to use their space nor are events constrained by the venue's operating hours, enabling flexibility to schedule events at variable times and days of the week. Furthermore, there is no need to rent, set up, and take down equipment. And, similar to in-person speed-dating studies (see Finkel et al., 2007), people will participate in exchange for meeting potential romantic partners rather than financial compensation.

Nevertheless, virtual speed dating can pose unique scheduling challenges. First, the ability to schedule many events could provide participants with too many options for upcoming future events, increasing the likelihood of unfilled participant slots. Second, last-minute cancellations and no-shows are likely to be more common in a virtual format because anonymity is heightened (Suler, 2004) and feelings of personal responsibility are minimized (Diener et al., 1976). Employing a waitlist can help reduce the impact of cancellations, but last-minute cancellations or no-shows will create gaps in the speed-dating rotation. To reduce such gaps (i.e., wasted time for participants), researchers should (a) minimize the potential for cancellations, (b) replace cancellations with wait-listed participants, (c) have procedures to adjust participants' speed-dating rotation schedules should last-minute cancellations or no-shows occur, and (d) communicate to participants what they should do if scheduling gaps do occur.

2.2.2 | How we did it

We contacted eligible participants via email with a schedule of upcoming events that matched their desired criteria (e.g., mixed-sex event, same-sex event). To prevent any event from having too few sign ups, we only provided the next three scheduled events as options. Scheduling all events in the near future also helped to minimize the chance that participants might become ineligible because they began to date someone after signing up, forget about the event, or lose interest in participating. Nevertheless, some cancellations are ineviteable, so to reduce the impact of cancellations we implemented a wait-list system that we used to fill vacated spots.

Ultimately, we hosted 15 mixed-sex events in which up to 12 women and 12 men speed dated each other and two same-sex events in which nine women speed dated each other. Four days prior to their scheduled event, we sent participants a baseline survey via Qualtrics and required them to complete it 48 hours prior to the event. These surveys included a variety of measures assessing myriad individual differences (e.g., personality, attachment security, partner preferences, relationship histories, etc.) that might influence attraction, dating decisions, or dyadic processes during dating interactions; thus, one advantage of including such a baseline survey is it can provide a rich source of data from which to predict speed-dating outcomes. Additionally, given that classic social psychological work (e.g., Freedman & Fraser, 1966) suggests that early engagement enhances psychological commitment, completing a baseline survey prior to their events may reduce the likelihood that participants would cancel or no-show. Requiring completion of a baseline survey in advance additionally afforded us the opportunity to replace unresponsive participants with wait-listed participants. We also created each event's rotation schedule one hour prior to its start time to adjust for last-minute cancellations and remove scheduling gaps; in a few instances, we were able to make scheduling adjustments at

the start of the event to remove gaps due to no-shows. In all, we experienced fairly low incidence rates of no-shows and last-minute cancellations that we could not accommodate participants' schedules for; across all 17 events, 10 scheduled participants no-showed and we had five last-minute cancellations that resulted in gaps in participants' speed-dating rotations.

2.3 | Technology

2.3.1 | Methodological considerations

Choosing a virtual-meeting platform

Researchers should select a meeting platform that (a) will be familiar to their target population, (b) has features that align with their key research questions, and (c) is accessible based on available resources. Some potential options include Zoom, Microsoft Teams, and Discord. At the time of writing, Zoom is perhaps one of the better options because (a) it supports free accounts, (b) people are familiar with it due to its widespread use during the COVID-19 pandemic for school, work, and socializing, and (c) it has many features useful for virtual speed dating, including a chat function, break-out rooms, and the ability to automatically cloud record speeddating interactions. Despite these features, Zoom does have a major limitation (at least at the time of writing): although break-out rooms could function as speed-dating rooms, they cannot be recorded simultaneously; given that one of the primary benefits of virtual speed dating is its ability to observe dyadic behavior, researchers will need to help participants navigate between their speed dates easily while recording each speed date. As we describe in greater detail below, we hosted several simultaneous Zoom meetings as speed-dating "rooms," which allowed us to record each speed date. Of note, this workaround requires independent accounts for each meeting because a single account cannot host multiple simultaneous meetings; fortunately, free Zoom accounts permit 40-min meetings, which is longer than the length of traditional speed dates (e.g., four minutes).

Microsoft Teams, an alternative meeting platform, is similar to Zoom in its functionality and available features. It is a communication platform that allows (a) groups of people to interact over video chat, (b) users to video record meetings, and (c) break-out rooms. Nevertheless, because Teams is generally a work-place platform, young adults such as college students or adolescents may be less familiar with it; for this reason, Teams may be better suited for somewhat older populations such as young professionals.

Yet another meeting platform is Discord, which is a free video, voice, and instant-messaging social platform. It has recently become popular among youth and young adults who use it for gaming, connecting with friends, and participating in group or campus-based organizations. Indeed, recent estimates suggest the average age of Discord users is as young as 16 (Geyser, 2023), making it an ideal platform for researchers who wish to investigate relationship formation among adolescents or young adults. Nevertheless, a major drawback of Discord is the inability to video-record individual speed dates. Discord allows for thousands of potentially useful add-ins, including *Craig*, which can simultaneously record multiple voice channels, but it, unfortunately, cannot be used for video recording (we are aware of other add-ins that enable video recording, but, to our knowledge, they do not allow for the simultaneous recording of multiple channels). We thus caution researchers against using Discord, at least until simultaneous video recording of multiple channels is permitted.

Technological difficulties

Technological difficulties will inevitably occur in any online setting. For example, participants could lose their Internet connection during the event, which would cause them to miss one or more of their speed dates or drop out of the event entirely. Researchers should be proactive about informing participants of resources they need to prevent such problems (e.g., a stable internet connection, and access to laptop/phone chargers) and have a plan for what they and participants should do if or when technological problems do arise. Additionally, some participants may not have access to a reliable WiFi connection at home, which may lead to self-selection biases such that people without requisite technology may not sign up to participate. If laboratory space is available and the study is being conducted locally, researchers could reduce such bias by allowing participants to use their laboratories to access the virtual speed-dating event.

2.3.2 | How we did it

We used Zoom for several reasons. First, we launched our study during the Fall 2020 semester (i.e., during the COVID-19 pandemic) and, consequently, students at our university were familiar with Zoom due to its widespread use for classes, campus organizations, and socializing. Second, Zoom best equipped us with the ability to obtain video recordings of all speed dates. Given Zoom did not allow recording break-out rooms, we scheduled multiple individual recurring Zoom meetings (each with their own Zoom link), with automatic cloud-recording enabled, to serve as the speed-dating rooms. Of note, for each meeting, we used independent Zoom accounts given a single account can only host one meeting a time. To facilitate participants' ease-of-navigation between the speed-dating Zoom links, we created a simple webpage that served as a "virtual speed-dating hallway" (https://fsuspeeddating.wixsite.com/hallway; see Figure S2 in Supplementary Material) that consisted of 12 doors, each hyperlinked to the individual Zoom meeting links. This "hallway" thus allowed participants to simply click on a door to easily navigate to each speed date as well as their same-sex "lobbies," where they (a) began their event and (b) returned to between each speed date. Utilizing automatic cloud recording for the speed-dating rooms eliminated the need for either researchers or participants to oversee the recording of the meeting; the recording began as soon as the first-speed dater entered the room and ended when both speed daters left the room.

To prevent some predictable technology problems from arising, we asked participants to have their device chargers readily accessible, and our event hosts provided a few moments at the start of each event to allow participants to retrieve their chargers if necessary. Additionally, prior to their events, we scheduled one-on-one Zoom meetings with those participants who had technology questions and wanted to troubleshoot or practice using their equipment. We also instructed participants to log in to their events 10 min early to ensure that all technology was working properly and, if not, to allow us time to troubleshoot. Finally, a research assistant monitored the study's email account during every event to communicate with participants if technology-related issues occurred. Indeed, on a few occasions, participants left unexpectedly in the middle of the event, usually due to an Internet-connectivity issue or computer malfunction, and we quickly connected with them via e-mail to help them re-join the event. If a participant could not re-join, the research assistant communicated that to the event hosts quickly so the event could proceed without that participant. In our study, we only had 10 participants who left the event early and did not return; of these participants, one left due to a power outage, and

two others left due to Internet connectivity issues. The remaining seven participants left for non-technology (e.g., forgetting about other plans they had) or unknown reasons.

2.4 | Event procedures

2.4.1 | Methodological considerations

Virtual speed-dating studies present unique challenges that vary depending on the chosen online-meeting platform. Nevertheless, many platforms will face at least three similar challenges. First, because interacting with strangers via the Internet potentially carries serious risks (e.g., unwanted future contact, stalking), researchers should protect participants' privacy and safety by implementing procedures that conceal their personal information (e.g., names) until after matches—defined as mutually indicated interest in each other—are determined. Such procedures might include instructing participants to not display their names during the speeddating event, which may require participants to change their account settings in advance. Second, researchers should ensure that participants can easily and intuitively navigate between their speed dates. During an in-person event, speed daters physically move from seat-to-seat to meet each of their dates (Finkel et al., 2007), which is intuitive and requires little instruction; in contrast, a virtual event requires creativity to simulate this experience and enable participants to navigate between dates with ease. Careful planning and clear communication with participants is necessary. Third, participants need to synchronize the start and end of each speed date. Options for time-keeping methods may vary, depending on the chosen meeting platform, but some examples include (a) utilizing virtual timers that all participants can access and (b) instructing participants to use a timer or alarm on their mobile devices.

Finally, an additional challenge that may be specific to certain online meeting platforms (e.g., Zoom) is participants may try to utilize filters and/or virtual backgrounds. These features can obscure participants' characteristics (e.g., physical appearance) and their settings (e.g., cleanliness, markers of status) that influence attraction. If such characteristics are important to researchers' questions, they may want to prevent participants from utilizing these features by asking participants to disable the use of filters and virtual backgrounds; we suggest communicating such expectations to participants in advance of the speed-dating event. Although preventing the use of these features seemingly comes at the cost of enhanced privacy, doing so has the benefit of allowing researchers to explore questions regarding self-presentation strategies given that participants have complete autonomy over what they choose to display in their backgrounds. It is worth noting that researchers who choose to prevent the use of such features can still control for participants' environment through coding of such characteristics, while preserving the richness of the data.

2.4.2 | How we did it

On the eve of each speed-dating event, we emailed participants detailed information about what to expect and how to prepare. To prevent participants from using filters and virtual backgrounds we instructed participants to turn off any filters and virtual backgrounds for the speed-dating events, and we additionally disabled those features in the settings for the event meetings. To maximize safety, we instructed participants to change their Zoom name to a pre-assigned,

one-letter alias. For mixed-sex events, we assigned aliases A-L to one sex and M-X to the other, and we counterbalanced these sex-based alias assignments between events; for same-sex events, we assigned aliases A-M.

Participants began their event by entering a same-sex virtual "lobby," where a same-sex research assistant who served as the event host (a) ensured that each participant displayed their alias (and not their name), (b) oversaw a simple ice-breaker activity in which participants briefly shared their year in school and major, (c) provided a detailed overview of what to expect, and (d) sent participants a link to their event survey that included some beginning-of-event questionnaires. These beginning-of-event questionnaires assessed participants' emotions and feelings (e.g., happy, excited, nervous, hopeful, attractive), feelings of belongingness, and expectations for how successful they will be with meeting a romantic partner. Following the completion of these questionnaires, the hosts distributed participants' speed-dating schedules by sending a link to a view-only Google spreadsheet. This spreadsheet listed, for each alias, the order in which they should enter each "speed-date room" in the virtual hallway. During mixedsex events, aliases A-L entered the same room for every speed date and aliases M-X rotated between each room; during same-sex events, all participants rotated. We created these schedules one hour prior to each event, but gaps in the dating rotation sometimes occurred if someone no-showed or had to leave early due to unforeseen circumstances; in such instances, we instructed participants to remain in (or return to) their lobby if their speed date was not present for that rotation. All speed dates lasted four minutes. After four minutes elapsed, a timer buzzed in the virtual speed-dating hallway signaling participants to return to their respective lobbies, where we instructed them to advance to the next section of their event survey and answer questions about their speed date. Examples of questions that participants answered about each partner include: desirability as a short-term partner (e.g., a one-night stand), desirability as a long-term partner (e.g., an eventual marriage partner), perceived physical warmth, perceived physical attractiveness, and perceived status. Crucially, we assessed participants' interest in each speed-dating partner by asking, "Select 'Yes' or 'No' to tell us whether you would like to go on another date with this person. (Please note that we will use your response to this question to form your matches. We will only schedule a date with this person if you select 'Yes' and that person also selects 'Yes')." We additionally included a continuous measure of romantic interest by asking, "All things considered, how much would you like to see this person again (i.e., go on another date with this person)?" utilizing a 7-point scale ranging from 1 = "Not at all" to 7 = "Extremely."

Given each mixed-sex event utilized two same-sex lobbies and thus two hosts, the hosts kept in close contact with each other to ensure that both lobbies stayed on pace with each other and, importantly, began each speed date at the same time. During any down time, participants were permitted to interact with each other within their respective lobbies. Following their final speed dates, participants completed post-event questionnaires, which assessed participants' feelings about how the event went, belongingness, and their perceptions of their romantic rivals with whom they observed and interacted throughout the event. After completing these questionnaires the host told participants they would receive notification about their matches the next day.⁵

To successfully implement these procedures, we required three research assistants: two to host each same-sex lobby (only one host was required for same-sex events) and one to assist with behind-the-scenes issues (e.g., updating schedules, and e-mailing participants who leave the event unexpectedly). Given that these same research assistants can coordinate scheduling and survey administration, it is possible to conduct a virtual speed-dating study with a team of three, though a larger team would obviously allow greater scheduling flexibility.

It is also worth noting that, although we did not specifically solicit feedback, several participants voluntarily contacted us to tell us how much they enjoyed their speed-dating event. Some participants who did not receive matches (or dissolved their relationships with their matches) even tried to sign up for a second event, which we did not permit given broader study goals. Such feedback highlights the feasibility of this method due to the ease of recruitment and enjoyment of the event procedures.

Variant for same-sex events

For our two same-sex events, we made some necessary modifications to the above procedure. First, we utilized a single same-sex lobby, which necessitated only one research assistant to act as an event host. Second, a male research assistant always served as the host for these female-attended events (we would have used a female research assistant as the host for male-attended events if we had hosted any such events). Third, to limit the potential for the speed daters' expectations of their partners to be biased in any way by interacting with or seeing their speed-dating partners prior to their actual speed dates, we instructed all participants to keep their microphones and cameras off while in the lobby. Consequently, we also skipped the ice-breaker introductions at the start of the event.

2.5 | Longitudinal components: Virtual first dates with matches and weekly follow-up assessments

2.5.1 | Methodological considerations

Speed-dating studies do not always include longitudinal components, but following up with participants after their event can yield fruitful insights into relationship formation—a process that unfolds *after* initial dating interactions occur. Although some in-person studies have included such follow ups (Asendorpf et al., 2011; Eastwick & Finkel, 2008), a virtual method offers the opportunity to *observe dyadic behavior* (e.g., smiling, nonverbal mimicry) during interactions subsequent to the speed-dating event. Indeed, researchers can again utilize online meeting clients (e.g., Zoom) as participants continue to get to know their matches (i.e., attending virtual first dates with their speed-dating matches). Combining dyadic behavioral observations of these first dates with subsequent follow-up assessments may provide new insights into the processes underlying how people decide to pursue specific relationship partners.

Of course, these longitudinal components are not without their challenges. First, if researchers plan to schedule matches for follow-up first dates, they should prepare for the likelihood that many participants will have multiple matches and thus will need to be scheduled to attend multiple follow-up dates, which can be time consuming and challenging for both researchers and participants. Second, participants with multiple matches may confuse partners when completing their follow-up surveys. Careful consideration of how to overcome these issues, such as embedding the match's initials, first name, or photo, within surveys will help ensure data quality.

2.5.2 | How we did it

We aimed to collect longitudinal, dyadic, and behavioral data by observing participants' first indepth interactions with each match and thus scheduled participants to attend a "virtual first

date" with each match. The morning after their speed-dating event, we individually emailed each participant to inform them of their number of matches and inquired about their availability for the following week so we could schedule their virtual first date (via Zoom) with each match. To prevent within-match contact prior to these virtual first dates, we withheld identifying information about participants' matches. Although some participants asked to skip some dates for various reasons, we found it helpful to remind participants that another person was excited to meet them; in most cases, this was enough to motivate participants to attend all of their first dates. It is worth noting that some participants did form a meaningful connection on a virtual first date prior to attending all of their scheduled dates and thus requested to cancel their remaining dates to avoid leading them on; although we tried to minimize such cancellations, this reflects a natural dating process that could potentially provide new insights into how people make decisions to pursue a relationship with one person and eschew their alternatives.

We cloud recorded each virtual first date, and a research assistant attended the beginning of the date to provide instructions and answer questions. After the research assistant instructed participants to (a) stay on the date for at least 30 min, (b) talk about anything they would normally talk about during a first date, and (c) exchange contact information if they wished to keep in contact with each other, they left the virtual meeting to allow the couple to continue their first date in private. By allowing participants the opportunity to exchange contact information themselves, participants had autonomy over such private information and could engage in naturalistic dating behaviors that also provided a behavioral measure of romantic interest.

Immediately following each virtual first date and then once per week for four weeks, participants completed a follow-up questionnaire assessing the state of their relationship with each match. For participants who attended multiple virtual first dates, we embedded each match's first name within their surveys and then later de-identified the dataset; this procedure ensured participants knew with certainty which match to think about for each survey. We compensated participants for completing their weekly surveys with raffle tickets for cash prizes, contingent on the proportion of follow-up surveys they completed.

2.6 Considerations for obtaining ethics approval

Conducting speed-dating research using a virtual, online methodology can pose ethical challenges not inherent to in-person methods that researchers should uniquely consider when seeking ethical approval to conduct a speed-dating study virtually (for an overview of ethical considerations for speed-dating studies in general, see Finkel et al., 2007). A primary concern is the protection of participants' privacy. In traditional, in-person, speed-dating research, participants do not receive identifying information about their speed dates from the study team until after mutual interest has been determined. But many online meeting clients automatically disclose identifying information such as participants' names. To protect participants from potentially unwanted disclosures, researchers could employ an alias system—as we did—to give participants autonomy in what identifying information they disclose during their speed dates (similar to in-person speed dating). Also related to privacy concerns is the presence of other individuals in participants' environment during the virtual speed dates. For example, some participants may have roommates or family members who might be able to see or hear the speed dates as they occur. To mitigate such concerns, researchers should instruct participants to participate from a private location. Nevertheless, given it is impossible to control participants' natural environments, the consent process should include information regarding the possibility that their participation in the speed dates may be observable by others in their speed-dating partners' environments.

Of course, researchers who opt to obtain recordings of each speed date should adequately plan how to protect such identifiable data that may contain sensitive information (e.g., participants' self-disclosures). To obtain ethical approval, researchers will need to develop a plan to ensure all recordings are (a) stored securely and (b) accessible only by trained researchers for research purposes such as behavioral coding.

3 | HOW DOES VIRTUAL SPEED DATING COMPARE TO IN-PERSON SPEED DATING?

We conducted some preliminary analyses using data from our study to demonstrate the utility of virtual speed-dating for studying attraction. Specifically, we present preliminary data suggesting that a virtual speed-dating method can yield outcomes and findings consistent with speed-dating outcomes reported from in-person speed-dating research and, additionally, that participants can form meaningful interpersonal connections through virtual speed dating.

First, we provide descriptive data for men's and women's outcomes from our virtual speed-dating study (see Table 1). These descriptive data represent the full sample, including participants from all mixed- and same-sex events (N=330). As can be seen, and similar to an inperson speed-dating study (Fisman et al., 2006), participants were relatively attracted to their speed-dating partners and "Yessed" approximately half of their speed dates, though women demonstrated greater choosiness than did men, t(328)=-6.20, p<.001. Participants also self-reported how well they got to know each date using a 7-point scale (1= "Not well at all;" 7= "Extremely well"); on average, participants indicated feeling they got to know their dates moderately well (M=3.71, SD=0.86), as suggested by a one-sample t-test demonstrating that participants' ratings on this item fell above the mid-point of the scale (3.5), t(329)=4.40, p<.001. Also similar to prior in-person work (e.g., Finkel et al., 2007), the virtual speed dates yielded on average just over two matches per person (range =0 to 10), with the majority (83%) of participants receiving at least one match. Of note, other in-person speed-dating research (Asendorpf et al., 2011) has demonstrated somewhat lower success rates, yielding an average of 1.28 matches and 61% of participants receiving at least one match.

Of those participants who received at least one match (n = 274), 259 (95%) attended a virtual first date, and 233 (85%) completed at least one weekly follow-up assessment (see Figure 1 for a visual flow chart depicting participant outcomes over time in our study). In these follow-

TABLE 1 Virtual speed-dating outcomes.

	Men (n = 149)	Women $(n = 181)$
Overall attraction to speed-dating partners	4.31 _a (0.80)	3.48 _b (0.90)
Percent of speed dates "Yessed"	58.03 _a (0.22)	42.61 _b (0.23)
Percent of participants who matched	81.90 _a (0.39)	84.00 _a (0.37)
Mean number of matches	2.46 _a (2.03)	2.38 _a (1.80)

Note: We assessed overall attraction on a 7-point scale. "Percent of participants who matched" refers to the percent of participants who "yessed" at least one partner who also "yessed" them. Different subscripts within rows denote statistically significant sex differences (ps < .001). SDs are reported in parentheses.

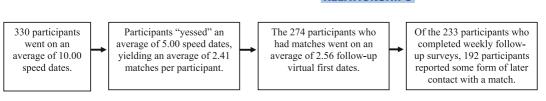


FIGURE 1 Flow chart of participant outcomes.

up assessments, 73 (31%) participants reported later meeting up in person, 59 (25%) reported going on an in-person date, 29 (12%) reported talking on the phone, 38 (16%) reported video chatting, and 35 (15%) reported some other form of contact (e.g., Snapchat, e-mail).⁶ Furthermore, nine matches indicated they were "casually dating," and four matches indicated they were "exclusively dating." It is possible that additional matches formed casual or exclusive relationships following the study's completion and thus these numbers may underestimate the actual occurrence of relationship formation. Of note, a few couples contacted us over a year later to let us know they were still together, and two couples told us they were engaged. Although similar frequency data are not readily available from longitudinal in-person speeddating studies, such work has reported that frequencies of further contact "were low," with approximately 39% of participants self-reporting subsequent face-to-face contact (Asendorpf et al., 2011). Our in-person meeting rate was similar, though may have been somewhat suppressed due to ongoing COVID-infection concerns. It is also worth noting that, in the absence of romantic relationship formation, participating in our virtual speed-dating study may have resulted in the formation of other types of affiliative relationships that we did not assess such as weak ties/acquaintances or friendships. Even weak ties in which individuals do not know each other well can be beneficial to personal well-being (Sandstrom & Dunn, 2014), and they can also later develop into close relationships (Sprecher, 2022). Given the incidence rate of participants reporting the use of future contact with one another using social media such as Snapchat, it seems likely that such weak ties did form. Nevertheless, our data likely understimate the extent to which virtual speed-dating may promote the formation of varied social relationships that are consequential to peoples' lives (e.g., weak ties, friendships).

Second, we next sought to conceptually replicate associations from prior in-person speed-dating research demonstrating crucial attraction-related outcomes. Given the multiple sources of nonindependence in speed-dating data, for all analyses that follow we used SPSS 29 and followed procedures for using the Social Relations Model (Kenny & La Voie, 1984) to analyze data with an asymmetric block design (i.e., participants in one subgroup interact with and rate members of a another subgroup, such as sex) with mixed-sex dyads (see Ackerman et al., 2015). Of note, these analyses do not permit the ability to simultaneously include both mixed-sex and same-sex dyads nor do they permit the use of dichotomous outcomes (a "yes/no" response; see Ackerman et al., 2015). Consequently, we (a) utilized data from the 15 mixed-sex speed-dating events (N=312) and (b) utilized the continuous measure of attraction instead of participants' dichotomous "yes/no" decisions. Finally, we accounted for variance between speed-dating events by controlling for the number of event (effects coded; see Ackerman et al., 2015).

Prior in-person speed-dating research has demonstrated that people are more attracted to partners who are rated relatively higher (versus lower) in warmth (e.g., Valentine et al., 2020), physical attractiveness (e.g., Asendorpf et al., 2011) and status (e.g., Eastwick & Finkel, 2008). We sought to conceptually replicate these findings. To this end, we conducted three social

relations models (Kenny & La Voie, 1984). In the first model, we regressed participants' reports of how much they wanted to see their speed-dating partners again onto the extent to which they perceived their partner to be warm/kind8 (standardized across all people and all speed dates); the fixed effects revealed that, consistent with in-person speed-dating studies, people were more likely to want to see a partner again who they perceived to be more (versus less) warm, b = 0.84, SE = 0.03, t(2834.78) = 28.30, p < .001, CI_{95%} [0.78, 0.90]. This association did not differ for male versus female participants (p = .906). In the second model, we regressed participants' reports of how much they wanted to see their speed-dating partners again onto the extent to which they perceived their partner to be physically attractive (standardized); the fixed effects revealed that, consistent with in-person speed-dating studies, people were more likely to want to see a partner again who they perceived to be more (versus less) physically attractive, b = 1.44, SE = 0.03, t(1858.80) = 55.93, p < .001, CI_{95%} [1.39, 1.49]. This association did not differ for male versus female participants (p = .426). In the third model, we regressed participants' reports of how much they wanted to see their speed-dating partners again onto their perceptions of their partner's relative social status¹⁰ (standardized); the fixed effects revealed that, consistent with in-person speed-dating studies, people were more likely to want to see a partner again who they perceived to be high (versus low) in social status, b = 0.61, SE = 0.03, t(2589.57) = 17.84, p < .001, CI_{95%} [0.55, 0.68]. This association did not differ for male versus female participants (p = .373).

Prior in-person speed-dating research has also demonstrated that people are more attracted to partners who they perceive as similar to themselves (e.g., Tidwell et al., 2013). We next sought to replicate this association. To this end, we conducted a social relations model to regress participants' reports of how much they wanted to see their speed-dating partners again onto perceived partner similarity¹¹ (standardized); the fixed effects revealed that, consistent with in-person speed-dating studies, people were more likely to want to see a partner again who they perceived to be more (versus less) similar to themselves, b = 1.14, SE = 0.03, t(2926.12) = 44.26, p < .001, CI_{95%} [1.08, 1.19]. This main effect of perceived partner similarity was qualified by a significant interaction with participant sex, b = 0.06, SE = 0.03, t(2896.87) = 2.38, p = .018, CI_{95%} [0.01, 0.11]. We thus used the procedure outlined by Ackerman et al. (2015) to estimate parameters separately for male and female participants, and results demonstrated that perceived partner similarity was positively associated with wanting to see a partner again for both sexes, albeit the association was somewhat stronger among females, b = 1.20, SE = 0.03, t(1546.40) = 34.70, p < .001, CI_{95%} [1.13, 1.26], compared to males, b = 1.07, SE = 0.04, t(1542.83) = 28.27, p < .001, CI_{95%} [1.00, 1.15].

Finally, prior in-person speed-dating research has also demonstrated evidence for dyadic reciprocity such that people tend to like partners who like them back (e.g., Luo & Zhang, 2009). We next sought to replicate this association using our virtual speed-dating data. To this end, we used Social Relations Modeling to estimate a base model for participants' desire to see their speed-dating partners again in which we modeled separate intercepts for male and female participants; consistent with in-person speed-dating studies, the repeated-measures CSH rho estimate, which reflects the reciprocity correlation coefficient and, thus, the degree to which dyadic reciprocity occurred for the outcome variable (see Ackerman et al., 2015), was significant, r = .14, Wald z = 5.07, z = .001, providing evidence for dyadic reciprocity in our data.

Together, these preliminary data highlight the utility of using a virtual speed-dating paradigm to study attraction. Not only were participants able to get to know their speed-dating partners moderately well using this paradigm, they formed real relationships with these partners in the real world, even with our longitudinal follow-ups limited to just four weeks. Additionally,

in-person speed-dating formats.

4 | ADDITIONAL BENEFITS TO CONSIDER

As we have suggested throughout, virtual speed dating can benefit relationship science particularly our understanding of initial attraction and relationship formation—by offering a feasible way to conduct large-scale speed-dating studies and observe dyadic behavior during people's initial interactions. But there are myriad other ways that virtual speed-dating can yield novel insights for relationship science. For instance, similar to in-person speed-dating methods, virtual speed-dating methods can (a) incorporate experimental manipulations, (b) include a pre-event baseline survey to assess individual difference variables that may predict attraction, behaviors, and outcomes during the speed-dating events (as we did), and (c) use the Social Relations Model (Kenny & La Voie, 1984) to disentangle the role of actor versus partner versus relationship effects for predicting attraction in virtual speed-dating data. Furthermore, speeddating studies-regardless of whether they are conducted virtually or in person-are wellsuited to shed light on the poorly understood topic of the trajectory of early relationship development (Eastwick et al., 2019) if they include longitudinal follow-up assessments; inclusion of such follow-up assessments is not unique to virtual speed dating (see Asendorpf et al., 2011; Eastwick & Finkel, 2008). But there are several additional benefits that may be unique to virtual speed-dating research. In this section, we highlight these unique benefits, including the ways virtual speed dating can be leveraged to study novel research questions in domains that existing in-person methods cannot feasibly or adequately address, focusing on three such domains: first impressions of dating partners, romantic rivalries, and affiliation. We then raise the possibility that virtual methods allow for more diverse participants and types of relationships compared to traditional, in-person methods.

4.1 | Opportunities to study novel research questions

4.1.1 | First impressions of dating partners

Virtual speed dating affords researchers an unprecedented opportunity to test whether *behaviors* displayed during *initial dyadic interactions* contribute to people's first impressions of dating partners. In many lab-based or online studies, participants are often asked to evaluate potential hypothetical partners based on vignettes or dating profiles (e.g., Joel et al., 2014; Sritharan et al., 2010), but such methods cannot offer insight into impression formation of partners based on dyadic behavioral interactions, which is the gold standard for relationship science (McNulty et al., 2021). Additionally, in traditional, in-person speed-dating studies participants are usually present in the same room during their speed-dating event, facilitating observation and evaluation of potential partners prior to officially meeting them and, potentially, biasing expectations and evaluations of those partners. Such pre-interaction observations thus renders it impossible to isolate how dyadic behavior influences people's first impressions of and initial attraction toward other people. We were able to prevent pre-interaction observations in our mixed-sex events by separating men and women into virtual same-sex "lobbies" that they returned to

between dates, thereby ensuring participants could not observe or evaluate their potential partners until officially meeting them. This unique feature of virtual speed dating thus permits systematic and large-scale examination of how behavioral dynamics of people's early interactions contribute to their first impressions of dating partners. Of course, there are alternatives to this approach if researchers wanted to better-approximate the experience of an in-person speed-dating study, including using a single lobby that all participants congregate in before and between their speed dates.

4.1.2 | Romantic rivalries

Virtual speed dating can also be used to study mate competition (i.e., romantic rivalries) in unprecedented ways. Mate competition is unavoidable (see Baumeister et al., 2017) and inevitably influences (a) how people view themselves and their own potential to compete (Sulikowski et al., 2022), (b) who people may select as partners (Dechaume-Moncharmont et al., 2016; Little & Mannion, 2006), and even (c) how people interact with peers (Bleske & Shackelford, 2001; Vaillancourt & Sharma, 2011). If researchers separate speed daters into same-sex groups prior to and between each speed date (as we did), virtual speed dating provides a unique opportunity to observe how people evaluate and interact with their competitors, which could provide valuable insights into competitive behaviors (e.g., information sharing, indirect or direct aggression). Such behavioral data could also be useful for gaining insights into how people balance motivational conflicts between mate competition and affiliation. Indeed, in our own virtual speed-dating study, we observed competitive behaviors in tandem with surprising affiliative behavior; in one event, for example, the women talked about being each other's bridesmaids for the weddings they hoped would come from participating, despite being in direct competition with each other!

4.1.3 | Affiliation

Virtual speed dating also offers new ways to study affiliative behavior more generally. In daily life, the people with whom we affiliate can be potential romantic targets, friendship targets, or both—and as the above anecdote nicely illustrates, people can form friendships with their romantic rivals. By separating participants of mixed-sex events into same-sex lobbies (as we did), virtual speed-dating studies permit the large-scale, observational study of affiliative processes via recordings of those larger group settings. Moreover, the virtual speed "dating" procedures could also be adapted to a virtual speed "friending" design (see Si et al., 2021), which would permit observational study of dyadic behavior between two potential friends.

4.2 | Improving inclusion and diversity within relationship science

A crucial way that virtual speed dating can benefit relationship science is through its potential to recruit relatively more inclusive and diverse samples. Ensuring that diverse populations are represented in relationship science is important not only for ensuring generalizability of research findings, but also for developing a stronger scientific understanding of diverse kinds of relationships (e.g., long-distance relationships, non-heterosexual relationships). We identified

at least two ways in which virtual speed dating can help make important advancements toward these ends.

First, in-person studies may unintentionally exclude certain populations from participating such as people who (a) lack transportation, (b) are disabled, or (c) may have other constraints (e.g., work schedules, child care). Likewise, shy, introverted, or highly anxious people may be too intimidated or overwhelmed to participate in such a study. In contrast, virtual speed dating may be relatively more accessible to these populations because they reduce barriers and allow people to participate from the comfort and familiarity of their homes. Additionally, the time and location of virtual speed-dating events are not constrained by a host venue's availability or operating hours, which enables researchers to conveniently host events on both weekends and weekdays at various times (e.g., evening, business hours). Such flexible hours might attract participants who have busy work schedules, are in school, are employed at multiple jobs, or face other time constraints (e.g., child-care responsibilities). Of course, virtual speed-dating studies involve additional factors (e.g., access to technology) that may introduce some self-selection bias and limit diversity in other ways. Indeed, participation requires participants to have access to necessary equipment (e.g., devices with audio/visual capabilities) and resources (e.g., access to stable Internet connection) that are not equally accessible to all. To help mitigate this limitation and ensure economic diversity within samples, future virtual speed-dating research should consider ways to provide necessary equipment and resources (e.g., loan tablets or computers, provide private space with stable internet access) to individuals who would otherwise lack access. Despite this limitation, virtual speed dating has the potential to reach more diverse participants who may be unlikely or unable to participate in traditional in-person studies.

Second, virtual speed dating offers researchers a unique opportunity to observe the formation of diverse kinds of relationships. Given the modern-day ease of connecting through technology and distance travel, some people pursue long-distance relationships with partners they meet online. Developing a better understanding of the processes involved in such long-distance relationships is important for understanding relationship functioning more broadly (e.g., Kelmer et al., 2013). Because virtual speed dating permits recruiting participants residing in geographically distant locations from each other, such studies are uniquely poised to yield valuable insights into long-distance relationship formation. This lack of geographical restriction also allows relationship scientists to more feasibly study sexually diverse relationship formation because they can recruit people residing in locations that have relatively greater sexual diversity, even if those researchers do not reside in such locations themselves. Not only would a large-scale study of sexually diverse relationships further our understanding of similarities versus differences in initial attraction, relationship formation, and even romantic rivalries within sexually diverse populations, it could help connect sexual minorities to each other. Indeed, recent survey data suggest 24% of partnered lesbian, gay, and bisexual adults (compared to 10% of heterosexual adults) met their partner on a dating site or app, indicating that this population may be particularly interested in virtual speed dating (McClain & Gelles-Watnick, 2023).

5 **DISCUSSION**

Leveraging the opportunities virtual speed dating affords can yield numerous benefits to relationship science. Some benefits we highlighted include the ability to (a) feasibly conduct largescale speed-dating studies, (b) observe dyadic behavioral data, (c) harness unique features of online-meeting technology to generate novel insights into relationship-formation processes

1475681, 2024, 2, Downloaded from https://onlinelibrary.wiley.com/doi/10.1111/pere.12548 by Florida State University Colle, Wiley Online Library on [1508/2024]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use. () A articles are governed by the applicable Creative Commons License

such as first-impression evaluations, person perception, and romantic rivalries, and (d) study diverse individuals and types of relationships. Furthermore, virtual speed dating may generate new insights that can advance theory and help clarify existing controversies in relationship science, such as the predictive power of partner preferences. There are, of course, other potential benefits virtual speed dating can offer, and this is likely to be especially true as modern technology continues to advance. As even newer technologies (e.g., virtual reality) emerge and become increasingly accessible, relationship scientists should evaluate how those technologies can further advance our models of initial attraction, relationship formation, and even long-term relationship maintenance (for a similar discussion, see Huang & Bailenson, 2019).

Despite these advantages, virtual speed-dating studies come with a unique set of challenges that span every stage of the research process that are not inherent to in-person speed-dating and laboratory designs. We hope the illustrative example of our own longitudinal virtual speeddating study and corresponding methodological considerations will be useful to researchers who want to conduct their own virtual speed-dating study.

5.1 Limitations inherent to virtual speed-dating studies

Although our primary goal was to highlight how virtual speed dating can be a feasible way of conducting speed-dating research as well as yield behavioral dyadic data to inform theory on initial attraction and relationship formation, it is of course not without its limitations. One such limitation is the relatively lower experimental control. Whereas participants in an in-person speed-dating study are present in the same environment (e.g., a university ballroom, bar), virtual speed-dating participants will likely participate from their own home or a public location (e.g., park, coffee shop). As we have already noted, such reduced experimental control increases the probability of having missing or unusable data because some participants, or even the environment, may act in unpredictable, unpreventable ways.

A second limitation concerns self-selection biases. Virtual speed dating might appeal to a certain subset of the population (e.g., people who have access to requisite technology, people who often socialize online such as through online gaming) and thus insights into attraction and relationship formation gleaned through virtual speed-dating methods may not necessarily generalize to the broader population. Of course, this is also true of in-person speed-dating events that likely appeal to a different subset of the population (e.g., more extroverted people).

A third limitation is the potential for videoconference fatigue to impact people's virtual speed-dating experiences. Indeed, prolonged use of videoconference tools such as Zoom can lead to the depletion of physiological and cognitive resources (Riedl, 2022). Moreover, it is unknown how viewing oneself on video while speed dating may influence people's selfpresentation or interactions with their speed-dating partners, but viewing self-video is associated with facial dissatisfaction that contributes to videoconference fatigue (Ratan et al., 2022). It is also worth considering the extent to which videoconference fatigue may more strongly impact those speed dates that occur toward the end versus the beginning of the virtual speed-dating event. That is, such fatigue may lead participants to more frequently indicate disinterest in later versus earlier speed-dating partners. Nevertheless, it remains possible that utilizing videoconferencing for social purposes such as dating may not elicit videoconference fatigue in the way that using it for other common purposes (e.g., work, school) does; indeed, belongingness appears to protect against videoconference fatigue (Bennett et al., 2021). It is thus unclear the extent to which videoconference fatigue might impact virtual speed-dating outcomes, so future research should be aware of this potential limitation and perhaps even study it directly.

Fourth, findings yielded from virtual speed-dating studies may be limited in the extent to which they generalize to face-to-face dating experiences. Indeed, the online disinhibition effect leads people to act differently than they would in face-to-face encounters (Suler, 2004) such as increased self-disclosure (McKenna et al., 2002). Due to the synchronous and dynamic nature of videoconferencing, many of the key factors underlying most online disinhibition (e.g., dissociative anonymity, invisibility, asynchronicity) may be less present in a virtual speed-dating context compared to other online dating contexts (e.g., using dating websites or apps). Nevertheless, online disinhibition could similarly lead people to engage in greater self-disclosure when virtual speed-dating than when meeting face-to-face. Thus, it is possible that some insights gleaned into dyadic processes that unfold during initial dating interactions from virtual speed-dating studies may differ from insights gleaned from in-person speed-dating studies.

Finally, virtual speed-dating studies are limited in the extent to which they can permit investigation of psychophysiological components of attraction. First, various aspects of physiology may promote and predict attraction, including autonomic nervous system activity (Zeevi et al., 2022), endocrine responses (van der Meij et al., 2019), and brain activity (Cooper et al., 2012); yet obtaining such physiological measures is less feasible in a virtual speed-dating setting. Researchers interested in the psychophysiological underpinnings of attraction could potentially obtain heart-rate data from wearable technology (e.g., smart watches), but obtaining other high-quality biomarkers (e.g., hormone levels) would be more difficult. Second, although online dating is a feature of modern society, virtual interactions could limit the extent to which people respond physiologically to their speed-dating partners. For example, when people interact with partners in an in-person setting, behaviors such as physical touch elicit physiological changes central to bonding (Coan et al., 2006; Portnova et al., 2020); in a virtual setting, such behaviors cannot occur.

In light of these limitations, we argue that relationship science will benefit most to the extent that scholars utilize virtual speed dating to capitalize on its many advantages (e.g., the ability to observe dyadic behavioral data, studying diverse populations) *in combination* with existing methodologies such as in-person speed-dating studies, daily-diary studies, and laboratory experiments. That is, we view the virtual speed-dating methodology introduced here as a new, valuable tool that relationship scientists can add to their multi-method tool belt.

6 | CONCLUSION

Living in the age of technology affords opportunities to capitalize on innovative research methods for studying interpersonal relationships. People are increasingly forming new relationships online so, here, we introduce an innovative method for studying attraction and relationship formation: *virtual* speed dating. Virtual speed dating offers myriad advantages ranging from its feasibility and the ability to observe dyadic behavior to potentially improving the diversity of individuals and the types of relationships represented in relationship research. Moreover, virtual speed dating could be adopted to study first-impression formation, romantic rivalries, and friendship formation. In light of these benefits, we recommend relationship scientists incorporate this methodological tool into their own work and, in doing so, offer methodological guidance.

CONFLICT OF INTEREST STATEMENT

We have no known conflict of interest to disclose.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request. Sample materials for hosting virtual speed-dating events are available at: https://osf.io/ey2wk.

ORCID

Juliana E. French https://orcid.org/0000-0001-9464-2343

ENDNOTES

- At the time of writing, a few examples of real-life virtual speed-dating events offered include Eventbrite.com's "Online Single Black Professionals Speed Dating," "Online Single Christian's Speed Dating," and "Greater Boston Virtual Speed Dating."
- ² Data were collected during the Fall 2020 and Spring 2021 semesters.
- ³ In Supplementary Material, we provide a flow chart outlining the main considerations to facilitate ease-of-planning for future research (see Figure S1).
- ⁴ Baseline surveys can be linked to subsequent, longitudinal assessments via unique de-identified codes assigned to participants.
- ⁵ A sample event protocol for our virtual speed-dating events is available at: https://osf.io/ey2wk.
- ⁶ These categories of contact are not mutually exclusive.
- ⁷ Participants reported how much they wanted to see their speed-dating partners again by answering the following question: "All things considered, how much would you like to see this person again (i.e., go on another date with this person)?" using a 7-point scale (1 = "Not at all" and 7 = "Extremely").
- ⁸ Participants reported their perceptions of partner warmth/kindeness by answering the following question: "How warm/kind is this person?" using a 7-point scale (1 = "Not at all" and 7 = "Extremely").
- ⁹ Participants reported their perceptions of partner attractiveness by answering the following question: "How physically attractive is this person?" using a 7-point scale (1 = "Not at all" and 7 = "Extremely").
- Participants reported their perceptions of partner social status using the MacArthur Scale of Subjective Social Status (Adler et al., 2000), a visual scale in which they were asked to place each partner on a 10-rung vertical ladder (numbered from 1 at the bottom to 10 at the top), with the top rung of the ladder representing "the people who are best off those who have the most money, the most education and the most respected jobs" and the bottom run of the ladder representing "the people who are the worst off who have the least money, least education, and the least respected jobs or no job."
- Participants reported their perceptions of partner similarity by answering the following question: "How similar is this person to you?" using a 7-point scale (1 = "Not at all" and 7 = "Extremely").

REFERENCES

- Ackerman, R. A., Kashy, D. A., & Corretti, C. A. (2015). A tutorial on analyzing data from speed-dating studies with heterosexual dyads. *Personal Relationships*, 22(1), 92–110.
- Adler, N. E., Epel, E. S., Castellazzo, G., & Ickovics, J. R. (2000). Relationship of subjective and objective social status with psychological and physiological functioning: Preliminary data in healthy, white women. *Health Psychology*, 19(6), 586–592. https://doi.org/10.1037//0278-6133.19.6.586
- Asendorpf, J. B., Penke, L., & Back, M. D. (2011). From dating to mating and relating: Predictors of initial and long–term outcomes of speed–dating in a community sample. *European Journal of Personality*, 25(1), 16–30. https://doi.org/10.1002/per.768
- Baumeister, R. F., Reynolds, T., Winegard, B., & Vohs, K. D. (2017). Competing for love: Applying sexual economics theory to mating contests. *Journal of Economic Psychology*, 63, 230–241. https://doi.org/10.1016/j.joep.2017.07.009

- Bennett, A. A., Campion, E. D., Keeler, K. R., & Keener, S. K. (2021). Videoconference fatigue? Exploring changes in fatigue after videoconference meetings during COVID-19. *Journal of Applied Psychology*, 106(3), 330–344. https://doi.org/10.1037/apl0000906
- Berscheid, E., Dion, K., Walster, E., & Walster, G. W. (1971). Physical attractiveness and dating choice: A test of the matching hypothesis. *Journal of Experimental Social Psychology*, 7(2), 173–189. https://doi.org/10.1016/0022-1031(71)90065-5
- Bleske, A. L., & Shackelford, T. K. (2001). Poaching, promiscuity, and deceit: Combatting mating rivalry in same-sex friendships. *Personal Relationships*, 8(4), 407–424. https://doi.org/10.1111/j.1475-6811.2001. tb00048.x
- Coan, J. A., Schaefer, H. S., & Davidson, R. J. (2006). Lending a hand: Social regulation of the neural response to threat. *Psychological Science*, 17(12), 1032–1039. https://doi.org/10.1111/j.1467-9280.2006.01832.x
- Conroy-Beam, D. (2021). Couple simulation: A novel approach for evaluating models of human mate choice. *Personality and Social Psychology Review*, 25(3), 191–228. https://doi.org/10.1177/1088868320971258
- Cooper, J. C., Dunne, S., Furey, T., & O'Doherty, J. P. (2012). Dorsomedial prefrontal cortex mediates rapid evaluations predicting the outcome of romantic interactions. *Journal of Neuroscience*, 32(45), 15647–15656. https://doi.org/10.1523/JNEUROSCI.2558-12.2012
- Cramer, R., Hexem, S., LaPollo, A., Cuffe, K. M., Chesson, H. W., & Leichliter, J. S. (2017). State and local policies related to sexual orientation in the United States. *Journal of Public Health Policy*, 38(1), 58–79. https://doi.org/10.1057/s41271-016-0037-9
- Croes, E. A., Antheunis, M. L., Schouten, A. P., & Krahmer, E. J. (2020). The role of eye-contact in the development of romantic attraction: Studying interactive uncertainty reduction strategies during speed-dating. *Computers in Human Behavior*, 105, 106218. https://doi.org/10.1016/j.chb.2019.106218
- Dechaume-Moncharmont, F. X., Brom, T., & Cézilly, F. (2016). Opportunity costs resulting from scramble competition within the choosy sex severely impair mate choosiness. *Animal Behaviour*, 114, 249–260. https://doi.org/10.1016/j.anbehav.2016.02.019
- Diener, E., Fraser, S. C., Beaman, A. L., & Kelem, R. T. (1976). Effects of deindividuation variables on stealing among Halloween trick-or-treaters. *Journal of Personality and Social Psychology*, *33*(2), 178–183. https://doi.org/10.1037/0022-3514.33.2.178
- Dufner, M., & Krause, S. (2023). On how to be liked in first encounters: The effects of agentic and communal behaviors on popularity and unique liking. *Psychological Science*, 34(4), 481–489. https://doi.org/10.1177/09567976221147258
- Eastwick, P. W., & Finkel, E. J. (2008). Sex differences in mate preferences revisited: Do people know what they initially desire in a romantic partner? *Journal of Personality and Social Psychology*, 94(2), 245–264. https://doi.org/10.1037/0022-3514.94.2.245
- Eastwick, P. W., Finkel, E. J., & Simpson, J. A. (2019). Relationship trajectories: A meta-theoretical framework and theoretical applications. *Psychological Inquiry*, 30(1), 1–28.
- Eastwick, P. W., Luchies, L. B., Finkel, E. J., & Hunt, L. L. (2014). The predictive validity of ideal partner preferences: A review and meta-analysis. *Psychological Bulletin*, 140(3), 623–665. https://doi.org/10.1037/a0032432
- Finkel, E. J., Eastwick, P. W., & Matthews, J. (2007). Speed-dating as an invaluable tool for studying romantic attraction: A methodological primer. *Personal Relationships*, 14(1), 149–166. https://doi.org/10.1111/j.1475-6811.2006.00146.x
- Fisman, R., Iyengar, S. S., Kamenica, E., & Simonson, I. (2006). Gender differences in mate selection: Evidence from a speed dating experiment. *The Quarterly Journal of Economics*, 121(2), 673–697. https://doi.org/10.1162/qjec.2006.121.2.673
- Fletcher, G. J., Overall, N. C., & Campbell, L. (2020). Reconsidering "best practices" for testing the ideal standards model: A response to Eastwick, Finkel, and Simpson (2018). *Personality and Social Psychology Bulletin*, 46(11), 1581–1595. https://doi.org/10.1177/0146167220910323
- Fletcher, G. J., Simpson, J. A., & Thomas, G. (2000). Ideals, perceptions, and evaluations in early relationship development. *Journal of Personality and Social Psychology*, 79(6), 933–940. https://doi.org/10.1037//0022-3514.79.6.933
- Fletcher, G. J., Simpson, J. A., Thomas, G., & Giles, L. (1999). Ideals in intimate relationships. *Journal of Personality and Social Psychology*, 76(1), 72–89. https://doi.org/10.1037/0022-3514.76.1.72

- Freedman, J. L., & Fraser, S. C. (1966). Compliance without pressure: The foot-in-the-door technique. *Journal of Personality and Social Psychology*, 4(2), 195–202. https://doi.org/10.1037/h0023552
- Gerlach, T. M., Arslan, R. C., Schultze, T., Reinhard, S. K., & Penke, L. (2019). Predictive validity and adjustment of ideal partner preferences across the transition into romantic relationships. *Journal of Personality and Social Psychology*, 116(2), 313–330. https://doi.org/10.1037/pspp0000170
- Geyser, W. (2023). The latest discord statistics: Servers, revenue, data, and more. Influencer Marketing Hub. https://influencermarketinghub.com/discord-stats/#:~:text=The%20average%20age%20of%20a%20Discord% 20user%20is%2016%20years%20old.,-The%20average%20age&text=In%20general%2C%20thirteen%2Dyear %2D,and%20start%20using%20the%20app
- Huang, S. A., & Bailenson, J. (2019). Close relationships and virtual reality. In T. Parsons, L. Lin, & D. Cockerham (Eds.), *Mind, brain and technology* (pp. 49–65). Springer.
- Joel, S., Teper, R., & MacDonald, G. (2014). People overestimate their willingness to reject potential romantic partners by overlooking their concern for other people. *Psychological Science*, 25(12), 2233–2240. https://doi. org/10.1177/0956797614552828
- Kelley, H. H., & Thibaut, J. W. (1978). Interpersonal relations: A theory of interdependence. Wiley.
- Kelmer, G., Rhoades, G. K., Stanley, S., & Markman, H. J. (2013). Relationship quality, commitment, and stability in long-distance relationships. Family Process, 52(2), 257–270. https://doi.org/10.1111/j.1545-5300.2012.01418.x
- Kenny, D. A., & La Voie, L. (1984). The social relations model. In *Advances in experimental social psychology* (Vol. 18, pp. 141–182). Academic Press.
- Latane, B., & Darley, J. M. (1968). Group inhibition of bystander intervention in emergencies. *Journal of Personality and Social Psychology*, 10(3), 215–221. https://doi.org/10.1037/h0026570
- Li, N. P., Yong, J. C., Tov, W., Sng, O., Fletcher, G. J., Valentine, K. A., Jiang, Y. F., & Balliet, D. (2013). Mate preferences do predict attraction and choices in the early stages of mate selection. *Journal of Personality and Social Psychology*, 105(5), 757–776. https://doi.org/10.1037/a0033777
- Little, A. C., & Mannion, H. (2006). Viewing attractive or unattractive same-sex individuals changes self-rated attractiveness and face preferences in women. *Animal Behaviour*, 72(5), 981–987. https://doi.org/10.1016/j. anbehav.2006.01.026
- Luo, S., & Zhang, G. (2009). What leads to romantic attraction: Similarity, reciprocity, security, or beauty? Evidence from a speed-dating study. *Journal of Personality*, 77(4), 933–964. https://doi.org/10.1111/j.1467-6494. 2009.00570.x
- Markey, P., & Markey, C. (2013). The complementarity of behavioral styles among female same-gender romantic couples. *Personal Relationships*, 20(1), 170–183. https://doi.org/10.1111/j.1475-6811.2012.01403.x
- McClain, C., & Gelles-Watnick, R. (2023). From looking for love to swiping the field: Online dating in the US. Pew Research Center. https://www.pewresearch.org/internet/2023/02/02/from-looking-for-love-to-swiping-the-field-online-dating-in-the-u-s/
- McKenna, K. Y., Green, A. S., & Gleason, M. E. (2002). Relationship formation on the internet: What's the big attraction? *Journal of Social Issues*, 58(1), 9–31. https://doi.org/10.1111/1540-4560.00246
- McKillip, J., & Redel, S. L. (1983). External validity of matching on physical attractiveness for same and opposite sex couples. *Journal of Applied Social Psychology*, *13*(4), 328–337. https://doi.org/10.1111/j.1559-1816.1983. tb01743.x
- McNulty, J. K., Meltzer, A. L., Neff, L. A., & Karney, B. R. (2021). How both partners' individual differences, stress, and behavior predict change in relationship satisfaction: Extending the VSA model. *Proceedings of the National Academy of Sciences*, 118(27), e2101402118. https://doi.org/10.1073/pnas.2101402118
- Milgram, S. (1963). Behavioral study of obedience. *The Journal of Abnormal and Social Psychology*, 67(4), 371–378. https://doi.org/10.1037/h0040525
- Montoya, R. M., Horton, R. S., & Kirchner, J. (2008). Is actual similarity necessary for attraction? A meta-analysis of actual and perceived similarity. *Journal of Social and Personal Relationships*, 25(6), 889–922. https://doi.org/10.1177/0265407508096700
- Neff, L. A., & Broady, E. F. (2011). Stress resilience in early marriage: Can practice make perfect? *Journal of Personality and Social Psychology*, 101(5), 1050–1067. https://doi.org/10.1037/a0023809
- Overall, N. C., Fletcher, G. J., & Simpson, J. A. (2006). Regulation processes in intimate relationships: The role of ideal standards. *Journal of Personality and Social Psychology*, 91(4), 662–685. https://doi.org/10.1037/0022-3514.91.4.662

- Overall, N. C., Fletcher, G. J., Simpson, J. A., & Sibley, C. G. (2009). Regulating partners in intimate relationships: The costs and benefits of different communication strategies. *Journal of Personality and Social Psychology*, 96(3), 620–639. https://doi.org/10.1037/a0012961
- Overbeek, G., Nelemans, S. A., Karremans, J., & Engels, R. C. (2013). The malleability of mate selection in speed-dating events. *Archives of Sexual Behavior*, 42(7), 1163–1171. https://doi.org/10.1007/s10508-012-0067-8
- Portnova, G. V., Proskurnina, E. V., Sokolova, S. V., Skorokhodov, I. V., & Varlamov, A. A. (2020). Perceived pleasantness of gentle touch in healthy individuals is related to salivary oxytocin response and EEG markers of arousal. *Experimental Brain Research*, 238(10), 2257–2268. https://doi.org/10.1007/s00221-020-05891-y
- Ratan, R., Miller, D. B., & Bailenson, J. N. (2022). Facial appearance dissatisfaction explains differences in zoom fatigue. Cyberpsychology, Behavior, and Social Networking, 25(2), 124–129. https://doi.org/10.1089/cyber. 2021.0112
- Riedl, R. (2022). On the stress potential of videoconferencing: Definition and root causes of zoom fatigue. *Electronic Markets*, 32(1), 153–177. https://doi.org/10.1007/s12525-021-00501-3
- Rosenfeld, M. J., Thomas, R. J., & Hausen, S. (2019). Disintermediating your friends: How online dating in the United States displaces other ways of meeting. *Proceedings of the National Academy of Sciences*, 116(36), 17753–17758. https://doi.org/10.1073/pnas.1908630116
- Sandstrom, G. M., & Dunn, E. W. (2014). Social interactions and well-being: The surprising power of weak ties. Personality and Social Psychology Bulletin, 40(7), 910–922. https://doi.org/10.1177/0146167214529799
- Sharabi, L. L., & Caughlin, J. P. (2017). What predicts first date success? A longitudinal study of modality switching in online dating. Personal Relationships, 24(2), 370–391. https://doi.org/10.1111/pere.12188
- Shaw Taylor, L., Fiore, A. T., Mendelsohn, G. A., & Cheshire, C. (2011). "Out of my league": A real-world test of the matching hypothesis. *Personality and Social Psychology Bulletin*, 37(7), 942–954. https://doi.org/10.1177/ 0146167211409947
- Si, K., Dai, X., & Wyer, R. S., Jr. (2021). The friend number paradox. Journal of Personality and Social Psychology, 120(1), 84–98. https://doi.org/10.1037/pspi0000244
- Sprecher, S. (2021). The role of expectations for liking and other positive affiliative outcomes in the get-acquainted process that occurs over computer-mediated video communication. *Current Psychology*, 42, 1044–1057. https://doi.org/10.1007/s12144-021-01466-4
- Sprecher, S. (2022). Acquaintanceships (weak ties): Their role in people's web of relationships and their formation. *Personal Relationships*, 29(3), 425–450. https://doi.org/10.1111/pere.12430
- Sprecher, S., & Hampton, A. J. (2017). Liking and other reactions after a get-acquainted interaction: A comparison of continuous face-to-face interaction versus interaction that progresses from text messages to face-to-face. *Communication Quarterly*, 65(3), 333–353. https://doi.org/10.1080/01463373.2016.1256334
- Sritharan, R., Heilpern, K., Wilbur, C. J., & Gawronski, B. (2010). I think I like you: Spontaneous and deliberate evaluations of potential romantic partners in an online dating context. European Journal of Social Psychology, 40(6), 1062–1077. https://doi.org/10.1002/ejsp.703
- Suler, J. (2004). The online disinhibition effect. Cyberpsychology & Behavior, 7(3), 321–326. https://doi.org/10. 1089/1094931041291295
- Sulikowski, D., Ensor, M., & Wagstaff, D. (2022). Mate-value moderates the function of make-up as a signal of intrasexual aggression. *Personality and Individual Differences*, 185, 111275. https://doi.org/10.1016/j.paid. 2021.111275
- Tidwell, N. D., Eastwick, P. W., & Finkel, E. J. (2013). Perceived, not actual, similarity predicts initial attraction in a live romantic context: Evidence from the speed-dating paradigm. *Personal Relationships*, 20(2), 199–215. https://doi.org/10.1111/j.1475-6811.2012.01405.x
- Turowetz, J., & Hollander, M. M. (2012). Assessing the experience of speed dating. *Discourse Studies*, 14(5), 635–658. https://doi.org/10.1177/1461445612454083
- Vaillancourt, T., & Sharma, A. (2011). Intolerance of sexy peers: Intrasexual competition among women. *Aggressive Behavior*, 37(6), 569–577. https://doi.org/10.1002/ab.20413
- Valentine, K. A., Li, N. P., Meltzer, A. L., & Tsai, M. H. (2020). Mate preferences for warmth-trustworthiness predict romantic attraction in the early stages of mate selection and satisfaction in ongoing relationships. Personality and Social Psychology Bulletin, 46(2), 298–311. https://doi.org/10.1177/0146167219855048

- van der Meij, L., Demetriou, A., Tulin, M., Méndez, I., Dekker, P., & Pronk, T. (2019). Hormones in speed-dating: The role of testosterone and cortisol in attraction. *Hormones and Behavior*, *116*, 104555. https://doi.org/10.1016/j.yhbeh.2019.07.003
- Vogels, E. A. (2023). About half of never-married Americans have used an online dating site or app. Pew Research Center. https://www.pewresearch.org/short-reads/2023/02/24/the-never-been-married-are-biggest-users-of-online-dating/
- Zeevi, L., klein Selle, N., Kellmann, E. L., Boiman, G., Hart, Y., & Atzil, S. (2022). Bio-behavioral synchrony is a potential mechanism for mate selection in humans. *Scientific Reports*, 12(1), 4786. https://doi.org/10.1038/s41598-022-08582-6

SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

How to cite this article: French, J. E., Bolton, L. J., & Meltzer, A. L. (2024). Virtual speed dating: Utilizing online-meeting platforms to study initial attraction and relationship formation. *Personal Relationships*, *31*(2), 420–444. https://doi.org/10.1111/pere.12548