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Research Article

Methodology in Motion: Reflections on Using Appnography for the Study of Dating Apps

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Corey W. Johnson[1], Luc S. Cousineau[2], Eric Filice[2], and Diana C. Parry[2]

Abstract

This article reflects upon and provides updates to appnography as a methodology for the study of dating digital app culture. Based on empirical fieldwork and in-depth nterviews with members of the research team, we re-assess and re-map appnography's original five methodological considerations—digital versus "real," profiles, space, place, and community, contextualization, and temporality—along two axes: design considerations and user considerations. We also add a third methodological axis, researcher considerations, to the methodological features of appnography and expound on its related concerns of participant recruitment and technological familiarity. With this reformulation, we believe appnography offers an even more robust means of bridging the ethnographic and the technological in qualitative research on apps and their use.

Keywords

digital, geosocial networking applications, apps, dating, relationship formation

A lot had happened since Jamie saw Luke last. Jamie had moved from Ohio to North Carolina to assume his role as the organist and music director of First Methodist Church. He had also come out of the closet, divorced his wife, moved into a new home, dated a man, and slept with many more. Unlike his contemporaries, he had never been to a gay bar but instead had met all of his sexual partners (which were many) online using dating and hook-up apps like Grindr or Scruff. Luke knew very little about Jamie's life changes but had reached out to see if he might come for a visit. Luke had been a good friend, chorale colleague and, as an out gay man, someone Jamie both admired and desired. Would his attraction be evident? Could this be the love he so desired? His hands were clammy and slipped from the steering wheel as he thought about the possibilities. How would he tell him he was also gay? Would Luke be surprised, or would he nod affirmingly as so many of his friends had? His stomach did a bit of a double turn as he repositioned his hands on the wheel, passing the beautiful mountain range to his right as he drove from Asheville to Greenville, where Luke was flying into. To make Jamie's 90-min jaunt worthwhile, they had mutually decided to catch a performance of the popular musical, *Hair*, in Greenville. Despite his anxiety, after the airport pick-up hug, the two fell into easy conversation, reminiscent of old friends who have spent little time apart. Luke detailed the updates on his career as a high school music teacher and Jamie talked some about his job, but mostly of his divorce. Dinner ensued, followed by a shaky traveling performance of *Hair*.

The ride home offered more time to reacquaint themselves with one another, but Jamie remained on the tricky precipice of coming out to Luke. Once back at Jamie's home, they engaged in the usual hospitality rituals. Jamie gave a tour of his home, showed Luke to his room and then opened a bottle of only the finest Cupcake Red Blend, and they both nestled onto the couch to continue their conversations. The chat lingered longer than imagined, but eventually the yawns let them both know that the night should come to an end . . . or should it? Jamie and Luke bid each other good night and headed off to their respective rooms. Jamie regretted not coming out to Luke, especially because the night could have ended differently. As they made their way to their rooms, they retreated to their phones (as most of us do) and opened Grindr to see who was on and who was around. Jamie looked down as the app loaded and noticed his closest connection was merely feet away. What!?!?! He quickly closed it down. He started to breathe heavily and almost panicked. On the other side of the wall, Luke messaged, "hey, just visiting here, but you are really close . . ."

This vignette—based on a real encounter as told to Johnson using pseudonyms—catalyzed a multi-year research project into the roles dating and hook-up apps play

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[1] North Carolina State University, Raleigh, NC, USA
[2] University of Waterloo, Ontario, Canada

Corresponding Author:
Corey W. Johnson, North Carolina State University, Box 800, 2721 Sullivan Drive, Raleigh, NC 27601, USA.
Email: cjohns28@ncsu.edu

in our social-sexual relationships. As scholars of media, sexuality, and leisure, when first author Johnson recounted this narrative to us, we recognized in it several unique occurrences and relationalities created by Grindr. Grindr's ability for users to create anonymous digital profiles and use geo-locative technologies to connect users within feet of each other created the circumstances in which Jamie could finally come out to Luke (along with much more). This confluence of app design and user profiles coalesced to make a chance digital encounter between two real-life friends possible. Coinciding with our empirical fieldwork, we developed a new methodology, appnography, for eliciting and making sense of these sorts of experiences. In this article we propose a reformulation of this method.

Appnography was initially developed by Cousineau et al. (2018) as a methodological framework for understanding the unique convergences of dating app culture. We began using this framework as part of our larger study on how geo-social networking applications (GSNAs), or dating and hook-up apps like Tinder, Grindr, Bumble, or Scruff, are affecting gendered and sexual social relations. We assembled a team of three professors and seven PhD students with diverse gender and sexual identities. We asked each team member to recruit participants from their networks for semi-structured interviews using narrative inquiry. We generated 45 interviews representing trans and nonbinary folks, straight men, gay and queer men, lesbian and queer women, and straight women. During this data collection, team members with a shared interest in digital landscapes began thinking through aspects of narrative inquiry and digital ethnography, and how to best apply the important elements of these approaches into a methodology tailored to research on mobile applications, specifically GSNAs. However, as data were collected and analyzed with the new appnographic approach in mind, and we debriefed our processes and experiences as a research team, Johnson began chronicling challenges and outcomes not anticipated at the outset and not fully accounted for in Cousineau et al.'s initial methodological propositions. In response, Johnson interviewed our seven PhD student research assistants to understand where appnography worked and where it came up short. While Cousineau et al.'s (2018) work has been useful for providing a framework for our ongoing inquiries into dating app culture, we found that using it *in practice* requires a few updates and revisions.

Accordingly, this article revisits appnography as a methodology for the study of app culture. We re-assess and re-map appnography's original five methodological considerations—digital versus "real," profiles, space, place, and community, contextualization, and temporality—in light of the study and follow-up interviews with the research team to further develop the methodology and ground it in empirical data. We reorganize these methodological considerations along two axes: *design considerations* and *user considerations*. Contextualization—which we rename "technological architecture" to better represent the design-oriented scope of these ideas—and temporality are *design considerations* that engage researchers in considering the effects of app design and changes to design over time. The remaining three considerations—digital versus "real," profiles, and space, place, and community—are *user considerations* because they document how users understand their interactions with others and the app's affordances. We also add a third methodological axis to appnography: *researcher considerations*. These considerations emerge from the reflexive interviews Johnson conducted with our research assistants and are related to questions of recruitment and technological familiarity. While Cousineau et al. (2018) discussed these two considerations briefly, we argue they are significant enough to merit additional attention.

Appnography provides a robust methodological framework that accounts for app design, user interaction, and researcher choices in qualitative research on app culture. By re-organizing these considerations along three axes (design, user, and researcher considerations), we are establishing a step-by-step reflexive methodology that bridges the ethnographic with the technological. By making GSNAs the privileged site of this methodology—which could also be modified to fit the qualitative study of other apps that have some level of user interaction—we are also highlighting the importance of continuing to center technofeminist and cyberqueer approaches to app culture. These approaches, which position digitally-mediated relations as extensions of—not separate from—institutional and discursive forms of power that permeate our everyday lives, allow for deeper examination of what Mowlabocus (2010) called the "structures that frame" (p. 21) interpersonal interactions online as well as offline, as these elements are necessarily complementary and interwoven (Wajcman, 2004). As explored in Cousineau et al.'s (2018) formulation of appnography, the grafting of technological orientations (through "techno" or "cyber") onto feminist and queer theoretical perspectives reflects "the symbiotic relationship between theory and digital space" (p. 100) that can inform how we approach digital research by calling on theory-methods that are attuned to power relationships and other socio-cultural determinants of user experience. GSNAs are highly sexualized and erotic spaces with complex sexual, gender, and racial dynamics that shift between interactions, platforms, and contexts of use, and thus require robust technocultural methodologies to account for their complexities.

Appnography as Ethnographic and Technocultural Methodology

Before re-assessing and re-mapping appnography's methodological considerations, we want to first situate it in relation to other ethnographic and technocultural methodologies for studying digital spaces. Where appnography differs from other digital ethnographic procedures is the focus on the temporality of application use, change, and development. Basic forms of digital ethnography tend to focus largely on the personal experiences of individuals, often removed from the technological setting, infrastructures, and changes inherent to that technologically mediated experience (Pink et al., 2016). In appnography, those settings, infrastructures, and changes are essential to the research and are as important as what human participants might say about the experiences in question. Here, we present an approach to GSNAs with similarities to how some authors have recently re-theorized Kozinets' (2020) Netnography with attention to technologies (Quinton & Reynolds, 2021; Wang, 2021) and temporality (Muskat, 2021), but with direct application for the context of GSNAs and particularly well-suited for mobile application research. Borrowing from actor–network theory, we envisage nonhuman artifacts like network technologies as exercising their own causal agency that cannot always be overcome by human reason or willpower (Latour, 2005). Hammers indeed arise from social relations, but they also have their own intrinsic properties; try as we might, it is all but impossible to make them function like a screwdriver. Hence, in addition to the cultural meanings ascribed to these technologies, it is important to examine their actual architectures—their affordances, interfaces, algorithms, and so on—to understand how their materiality can constrain the uses to which they are put.

Appnography also differs from technocultural approaches to app culture like the walkthrough method (Light et al., 2018) common in fields like communications, media, and science and technology studies, insofar as these methods "overcorrect" for digital ethnography's immaterialism by bracketing off user experience to center the infrastructures and architectures of a given app. Light et al. (2018) rightly note that to date, many methods used for studying apps overemphasize user experience and do not adequately offer a methodology to "interrogate an app's technological architecture" (p. 888) independently of user interpretation. Crucially, the walkthrough method

> involves the step-by-step observation and documentation of an app's screens, features and flows of activity—slowing down the mundane actions and interactions that form part of normal app use in order to make them salient and therefore available for critical analysis. (Light et al., 2018, p. 882)

Here, Light et al. (2018) advocate for a methodology that centers the app's technological architecture to understand more concretely app affordances and unites "approaches of tracing technological systems with cultural studies techniques for recognising discursive and symbolic representations" (p. 884). The walkthrough method, then, focuses on the various technological features of the app to explore how such features produce particular discursive formations. However, to overlook the ways in which users might renegotiate the meanings encoded within technologies and/or reappropriate technological features for unexpected ends is perhaps to push the needle too far back toward technological determinism—the idea that technological arrangements determine social arrangements in a unidirectional manner (MacKenzie & Wajcman, 1999).

Appnography aims to strike a balance between humanism and determinism (Lister et al., 2009) by bridging the ethnographic and technocultural approaches. Rather than attend selectively to users' everyday experiences or technical infrastructures, appnography examines the relationships between the two. As Cousineau et al. (2018) wrote, appnography "acknowledge[s] the non-centrality of the digital spaces or media objects within the ethnographic study, recalling the intersections of individual, social, technological, personal, and public that interpolate the user" (p. 102). In line with actor–network theory (Latour, 2005), appnography presupposes that all sociomaterial phenomena—routines, institutions, technologies—are composed of networks between human and nonhuman actors. Neither society nor technology are determinative since both are made of the same "stuff": contingent and overlapping assemblages of cultural representations, discourses, chemicals, minerals, and atoms. As such, appnography views the technological architecture as one of numerous discursive formations of the user's experience. While the app may be the nexus through which research is conducted, appnography recognizes that users come to the app already situated within networks of social contingency, as well as with preconceived notions about how digital space operates in tandem with, and distinct from, physical space. To investigate the outcomes of these complex entanglements between users, technologies, and social context, appnography relies upon a variety of methods for data collection and analysis—sometimes on their own but often in tandem as a form of "bricolage" (Denzin & Lincoln, 2000)—including the panoply of ethnographic methods (e.g., participant observation, interviews, focus groups), dialogic action interviews (Thompson, 2022), walkthroughs of app interfaces (Light et al., 2018), and platform historiography (Helmond & Van der Vlist, 2019).

Updated Methodological Considerations

We noted that, overall, appnography's five original considerations provided a robust framework for our studies into dating apps. We have found it useful, however, to reorganize and update these considerations around three axes: design considerations, participant considerations, and researcher considerations (see Table 1). We start our

Table 1. Methodological Considerations Organized by Axis.

Axis	Consideration
Design considerations	Technological architecture
	Temporality
Participant considerations	Digital versus "real"
	Profiles
	Space, place, and community
Researcher considerations	Technological familiarity
	Recruitment

discussion with two design considerations: technological architecture and temporality. These two considerations largely deal with questions of app design and affordances. Next, we move to three participant considerations: digital versus "real," profiles, and space, place, and community, which deal largely with questions of user interaction with the app and each other. Finally, we propose two new researcher considerations: technological familiarity and recruitment. These emerge specifically from our reflexive interviews with members of the research team.

Design Considerations

Technological Architecture

Appnographic research needs to pay careful attention to the "technological architecture" (Light et al., 2018, p. 887) of the app and its similarities and differences to other GSNAs. While Cousineau et al. (2018) initially conceptualized this as "contextualization"; technological architecture more accurately conveys the specific issues of app design that need to be taken into consideration. In their original theorizing, Cousineau et al. (2018) wrote that "new digital ethnographies must recognize the ways in which interactions on GSNAs are limited by the available technology and developers' design decisions" (p. 109). Our interview data largely support this position. When it comes to thinking through methodological questions of GSNA research, each of these considerations is structured by the individual app's design.

We can illustrate this through the various ways GSNAs make location data available to other users, and how the degree of precision of this data affects user understandings of their own personal privacy, safety, and security. Grindr and Scruff display location data to other users down to the meter; on Tinder and Bumble, information is displayed down to the kilometer, while on Hinge users only see the neighborhood location. Apps like Grindr and Scruff, which cater largely to gay men, place profiles on a grid relative to the user's location. The closer the profile is to the top left of the grid, the closer the users are to each other. Users also have the option of making their distance visible on their profile. . On apps like Bumble, Hinge, and Tinder, which cater largely to heterosexuals, profiles are displayed in a stack that users can swipe without any preference given to geographic location, beyond user-set preferences for distance of potential matches from their location. Unlike Grindr or Scruff, users of Bumble, Hinge, and Tinder can set the minimum and maximum distance, with the closest range being two kilometers. Users swipe left or right on these profiles, with new profiles appearing based on other intimate data points provided by the user or collected by the app. Like Grindr and Scruff, these apps allow users some ability to control whether or not they want their relative distance to be displayed on their profile.

While seeing how far away a potential match is, down to the meter, can be thrilling, it can also cause concerns about user privacy, safety, and security. One of our gay male participants from our sample of 45 GSNA users expressed concern that Grindr and Scruff's extreme geographic precision can pose risks:

> I don't like that someone can like walk around in a circle around my house and figure out I live in my house. [. . .] I wish there was a better way to kind of mask how far away you are [. . .] like you can remove written distance, [but] you still can't change the fact that someone can walk up to your house and see how close your picture is.

Similarly, as we discuss below with regards to space, place, and community, our trans and gay male users expressed unease in using GSNAs while traveling, especially in countries where homophobia and transphobia are more prominent. Depending on the GSNA, their location could be broadcast to other users, potentially putting their safety at risk. In our interviews with queer women, and straight men and women, concerns over their location were almost nonexistent. All of the GSNA users expressed concerns over personal safety, security, and privacy when curating their profile and chatting with people on these apps; but only gay men and trans folks expressed any real concern over the use of their location data. This example illustrates how the features of a technology shape how it is received and used by members of different social groups. Researchers looking to study user experiences and digital cultures thus would benefit from some understanding of how the technologies themselves work—the ways in which they are structured to variably encourage, discourage, demand, and refuse certain behaviors (Davis & Chouinard, 2016). To that end, researchers might triangulate methods for soliciting personal experiences and viewpoints (e.g., interviews and focus groups) with walkthroughs of the app(s) under study. Another potentially useful multimethod approach is the media go-along (Jørgensen, 2016), which tasks participants, with their mobile communication device at hand, to give a verbal and visual "tour" of the app, narrating their experiences and decisions.

Temporality

Owing to the relative ease with which changes can be distributed on a mass scale, apps are especially mercurial artifacts—over the last 12 months, Tinder's iPhone app received no fewer than 25 updates. In contrast to the hammer, for example, which has remained relatively unchanged in form and function for thousands of years, apps such as Tinder and Instagram have seen such dramatic overhauls to their interfaces and features as to be barely recognizable from their early 2010s incarnations. Hence, temporality assumes a special significance in analyses of app cultures. If design matters in appnographic research, then it is important to track changes to design over time—no matter how large or small—to understand both the specific features users may be discussing in our interviews, as well as how those features may change their understanding of the app and their interactions on the app. Cousineau et al. (2018) wrote changes "may promote different kinds of usage, and may change the nature of observations and participant data while the project is underway" (p. 111). While Light et al. (2018) noted that "since apps are not stabilised artefacts, it may be necessary to conduct the walkthrough multiple times throughout an app's development and updates" (p. 896), there are few studies that have implemented such an iterative approach to app research. To properly understand the specific context of app design influencing user behavior and understanding of the app, it is essential that researchers track and include this information in analysis. Changes (both large and small) to apps immediately change the user experience, and can have significant influence on participants and researchers (Gillespie, 2018).

Tracking these updates is crucial, especially when situating our research in the field. During the period of data collection—between July 2017 and August 2018—there were only minor changes made to the apps our participants used, so it was difficult to test the extent to which any major interface changes affected user interaction or behavior. However, in June 2020, Grindr announced a significant interface change: it was going to remove the "ethnicity filter" available to paid premium service users. This was largely in response to the growing influence of the Black Lives Matter movement, as many perceived the filter as a way for its white male users to "filter out" men of color from their interactions (Hunte, 2020). However, many queer men of color noted that the ethnicity filter was also a crucial tool for them to curate an experience on GSNAs free from the exoticizing and racist tendencies of white users (Gremore, 2020). Had we been collecting interview data during this period of significant change in Grindr's interface, we would have had to adjust our questions around race and racism to account for this change. Likewise, any future research on Grindr will need to account for the long-term effects of the removal of the ethnicity filter on user interactions.

Participant Considerations

Design considerations orient researchers to how apps' technical workings to some degree structure user behavior and social dynamics. However, the social shaping of technology perspective (MacKenzie & Wajcman, 1999) sensitizes us to the fact that users exert their own agency that prevent technologies from strictly determining social outcomes. Developers may attempt to enforce their ideal scenario(s) of consumption through engineering tricks, public relations, platform governance and the like, but users still regularly engage in "off-label use"; that is, they reappropriate technologies for unpredicted or unsanctioned ends. Although GSNAs are primarily marketed for meeting new sexual and romantic partners, they are also employed for such diverse purposes as social and political campaigning, viral marketing, sex work, searching for roommates, and buying and selling drugs (Duguay, 2020). The ever-evolving and unpredictable nature of technology use underscores the importance of meeting users "where they are"—inquiring directly into their goals, experiences, attitudes, and assumptions rather than simply inferring use from apps' digital architectures. What follows are some conceptual signposts to consider when soliciting such personal accounts.

Digital Versus "Real"

Depending on the specific design features and broader social context, users may understand their digital personas and their interactions with others in-app as more or less "real" than in-person ones. Appnographic projects need to critically interrogate the distinction some users may make between the digital and real, while at the same time respecting that app users may not make such a distinction. Cousineau et al. (2018) challenged the common assumption that there is an easy distinction to be made between the "digital"—the technologies and spaces made possible by digital technologies and the internet—and the "real"—the tangible aspects of the physical material space of the user. Our online selves represent, at least to some extent, our real selves and vice versa (Davis, 2014; Robinson, 2007). Others have similarly suggested that digital media are so thoroughly interwoven into the rhythms and spaces of everyday life as to undermine notions of "a self-enclosed cyberian apartness" (Miller & Slater, 2000, p. 5) or equivalences between the virtual and the immaterial, hallucinatory, or unreal (Bolander & Locher, 2020; Lupton, 2014; Were, 2013). Our data suggests that users have a more complicated relationship to the digital and the real that may be more accurately represented as a digital versus physical dyad. While many users maintained some kind of distinction between their physical and digital selves, they did not necessarily imagine the physical self as more real than the digital self. Rather, in some cases, the physical self was articulated as an imaginary idealized counter to the mundane reality of the digital.

Many GSNA users maintained a distinction between their in-app, digitally mediated interactions, and their in-person interactions with others. Connor (straight male) noted that physical interactions did not always line up with their digital interactions:

> By the time we met in person, it almost was like the interaction was different. Like, the way I read their text was kind of different. I had different connotations of what they were saying. And then we met in real life. I was like, "Oh this is actually how they're saying these things." It was like a whole complete new connotation because they're saying it with different inflection, different body language.

Our participants also valued real-life encounters more because they saw their online interactions as lower stakes. Several participants discussed how interactions online seem less real, are less threatening, and that experiencing rejection on GSNAs is less hurtful:

> Because you're not there in person, you're not face to face, there isn't any uncomfortableness about it. It's like if you want to say something, you say it and they either respond well or they don't. Whereas in person there's the awkwardness of how they might react or respond. (Julia, Lesbian)

Because these interactions were lower-stakes, participants were often more sexually disinhibited on dating apps than in real life. This distinction between online and offline sexual behavior illustrates here John Suler's (2004) "online disinhibition effect" (p. 323) in which users differentiate between "online fiction and offline fact" and create a more disinhibited online persona related to but distinct from their "real life" persona (Cheung et al., 2021).

However, it is important to note here the ways GSNA users imagine romantic "offline fictions" to counter what they saw as the unromantic "online fact" of dating app use. Many of our participants were nostalgic for romantic in-person meetings and in contrast viewed their in-app interactions as lower stakes:

> In real life it always feels like more genuine. It always feels more like fate put us on a path, kind of crap like that. [On] Grindr you pick and choose and if someone messaged me on Grindr you know I was better than the rest. Whereas if someone approaches me in a grocery store it's like, oh, they found me and they're not constantly comparing me to everyone else in the grocery store. So, I must be special. (Mason, gay male)

In the case of our GSNA users, Suler's (2004) online fiction/offline fact relation was flipped, and users differentiated between an offline fiction (in this case, the imaginary grocery store meeting) and online fact (the rather mundane act of matching with another user on their GSNA). Users made distinctions between the digital and the "real," but these distinctions did not always align with digital being fake and physical being real. While it is important, as Cousineau et al. (2018, p. 104) wrote, "to deconstruct the online/offline, virtual/real binaries in a way that recognizes the virtual as the extended, constructed self (or selves)" we need to be equally mindful of the ways GSNA users create physical fictions to counter the mundanity of GSNAs. Our data suggests that we must also remain mindful of not only the multiplicity of representations, but the varying levels of investments users may have in partitioning their digital from their real selves.

Profiles

This mindfulness toward how users understand and treat their digital versus "real" selves has ramifications for how appnography understands profiles. Profiles remain important methodologically in nearly all social media research, as they are the avatars and avenues of interaction users have with platforms and each other (Ward, 2017). This is especially true with GSNAs, as the profile is the initial and continuing point of connection between interacting users. In the appnographic context, researchers need to consider profiles in three distinct but connected ways to bring this perspective into focus: profiles as personal advertising, the expectation of authenticity in profile creation and curation, and the multiplicity of contexts which influence profile creation and curation.

Many users discussed their profiles as a form of self-advertisement. Consistent with the history of dating advertisements (Coupland, 1996), users negotiate and push back against "full-blown self-commodification" through the acknowledgment of offering "commodified versions of their own selves but only as a first move towards a negotiated matching or complementary of commodified attributes" (p. 191). The almost-paradoxical idea of being empowered by self-commodification within profiles was supported by our participants, some of whom referenced advertising of the self on GSNAs as an important factor in profile creation and curation: "I think you present [that] you're perfect on the apps. You don't want people to see you being sad, or you don't want people to see you being self-conscious, or things like that. You present the best attributes of you" (Megan, straight woman).

While users are engaged in this acknowledged self-promotion, there remains an expectation of profile authenticity. While every user expects matches to use photos and language that cast them in the best possible light, there is always a fear that profiles will misrepresent the person in real life. In some cases, users may not discover the incongruence until they meet in person, but in others it may occur during in-app interactions. As Sam notes, she would often come across people who were intentionally disingenuous in their profiles as a way to generate more matches and connections:

> You know how you have to identify your relationship status? She had it as single. And then [. . .] within the first 10 minutes, [she said] "My boyfriend and I are wanting to try different things and I've also been very curious about women. So are you interested?" To me that is false advertisement." (Sam, lesbian)

This expectation of authenticity has roots in our belief that the digital avatar, in a context where the endgame is to meet another person face to face, should truthfully represent the person. This expectation is likely heightened by the temporality of GSNA interactions. With location-based filtering and the ability to see large numbers of potential partners in quick succession, the time between seeing a profile and meeting in person is truncated, sometimes to mere minutes. Gamification of app-use notwithstanding (Tziallas, 2015), the immediacy of potential meet-ups promotes authentic representations, as inauthentic presentation may have consequences in real time (Birnholtz et al., 2014).

Finally, proper consideration of profiles must be aware of the multitude of meanings they take on and that users contend with personal, sociocultural, and technological constraints while creating profiles. Asher, one of our trans users, noted the different ways they would curate their profile based on the app's affordances and user norms:

> Say I used a Plenty of Fish account, I wouldn't necessarily out myself as trans on there, but if I used an OkCupid account, they have a lot of different options for trans like identification so I'd be more open about myself on there. But as like Grindr and Scruff are considered, like I would be open about being trans, but not about my identity (Asher, trans man)

What users share and do not share about their own identities, preferences, and desires is dictated by the complex intersections of identity, place, and positionality. These social constraints are layered with the technological affordances of app design to create complex systems of control over profile creation and curation.

Space, Place, and Community

The ways users present themselves on their profiles is affected by the spaces and places they occupy. Depending on the contexts in which space, place, and community are created, interactions on dating apps can result in the formation of communities, albeit ones that are potentially contingent. A growing body of evidence suggests that the interactions on GSNAs are far from "transactional," as Cousineau et al. (2018) suggested; instead, GSNAs can be crucial catalysts for the formation of communities (Pym et al., 2020). Our research has suggested that there are, at least within certain contexts, moments that eschew transactionalism, where communities are formed through and around dating apps. One interview subject spoke at length about the community formed on Recon, an app for the gay male fetish community:

> I have met a lot of people. It's changed my social life for sure, but it hasn't changed my everyday life. It's just another [app] that I flip through on a frequent basis. But yeah, I've met a lot of people. Socially, it has changed my life significantly. It's brought me out into the community and I've made a lot of friends through it. (Gavin, gay male)

Likewise, queer women also found that the apps helped them create community, and straight men and women often would use apps together in social settings, further strengthening their social bonds (Petrychyn et al., 2020). For queer women GSNAs also helped fill the gap left by the disappearance of queer women's spaces in North American cities since the 1980s (Chenier, 2004). While Cousineau et al. (2018) wrote at length about the spaces created by GSNA location data services, and how the virtual mapping of a space can affect the user's understanding of gay bars, we must recognize that gay bars are largely cis, white, male spaces. How does the fact that such spaces are hostile, or not welcoming, to queer women and racialized queers affect how we understand GSNA creation of space for these communities?

Such distinctions are further illustrated when we consider the vastly different concerns interviewees had around using GSNAs while traveling. Traveling provides numerous different perspectives on community that depend largely on the context and the user's relationship to the spaces they are visiting. For example, one of our trans users noted that they would never use dating apps when they travel outside of Canada because they feared for their safety. A white gay male user noted that he would use his dating apps far more when traveling because, as a fresh face on the app, he would get far more attention, and "it allows you to experience the community in that other area" (Gavin, gay male). This contrasts with a Bengali gay male user's experience of return to his birth country:

> When I was in Bangladesh, I would've thought, "I will never get along with these people. So what if I was born in Bangladesh? I will never be Bengali." But going back home this year and connecting with other gay Bengalis, it was almost like a *coming home again*. My mother used to say things like, "One day, you'll realize what it means to be a person of this land" or "To share the same earth with your people." And I never got that, until I opened up Grindr and had sex with Bengali guys. It was like coming home again." (Devesh, gay male)

Traveling can offer both a sense of newness and the sense of returning home. Safety, pleasure, desire—traveling operates at a nexus of these discourses and can provide fruitful territory for future research on the racial politics of GSNAs.

The spaces and places created on dating apps are more than transactional and can be important sites for the formation of communities, especially for marginalized identities.

Researcher Considerations

Although all previous sections address matters worthy of consideration for researchers, this axis has been so named because it specifically pertains to how the attributes, experiences, positionality, and practices of the researcher-as-instrument could potentially influence data collection and analysis in the study of app cultures (Pezalla et al., 2012). In their chapter, Cousineau et al. (2018) discussed questions of recruitment and researcher familiarity with profiles and space/place respectively. They wrote

> using personal profiles—the researcher's or the RAs'—has the potential to be problematic because of the profile's initial aim toward the personal goals of the researcher or RA (relationship, social, or sex), and not the ethnographic project. This goal incongruence may inhibit the researcher from connecting with users on a personal level (e.g., for sex or dating), or could lead to undesired contact and/or harassment from participants post-participation. (Cousineau et al., 2018, p. 106)

We found, after conducting interviews with our research assistants, that Cousineau et al.'s concerns were, in some respects, well founded. Our queer research assistants reported that some of their interviewees did flirt with them or attempted to pursue relationships. Likewise, Cousineau et al. (2018) wrote about researcher familiarity as that which "may grant researchers 'insider status' and greater access to participant interactions" (p. 108). They also noted that

> for the researcher occupying GSNA space for research purposes only, their 'outsider status' will be an obstacle to navigate. In this instance, the researcher is ethically compelled to be open and honest about their status within the GSNA and the purpose of building and displaying a profile. (Cousineau et al., 2018, p. 108)

In both instances, the experiences of our research assistants showed that these considerations were ethically and methodologically complex, and warranted further discussion.

Technological Familiarity

When studying digital cultures, researchers' personal knowledge and experience with the technology in question can influence the collection of empirical materials. Where the researcher is already a GSNA user, they can be said to have insider status (Greene, 2014). Through their own familiarity with the interface, use history, and personal history with the intricacies of a particular app, they are best placed to engage with that app for research. The researcher as user is then confronted with the personal and ethical challenge of deciding whether to use an existing personal profile or create a new research-focused profile when recruiting participants, conducting walkthroughs, or making observations. Using their personal profile may alter their persona and history on the app, while possibly deceiving potential participants, and using a research profile may prove disingenuous to other users (Benbunan-Fich, 2017). Where the researcher is not a previous user, the only option (should they wish to recruit in-app), is to create a profile for the purposes of research, and they must confront the same issues as the researcher-user about ethical (re)presentation.

The researcher–app relationship is further complicated if researchers are in monogamous relationships. The need to create and maintain a profile on a GSNA to gain familiarity and conduct research necessarily complicates the social contract between monogamous partners. The apps are designed with the end goal of building relationships (sexual or otherwise), and decisions about how to address these complications with partners are complex. One of our research assistants, James, did not tell his partner that he was downloading dating apps for this research:

> I didn't engage with this app, with [my partner], I didn't even know if I told her, I honestly don't think I did. I just don't think she'd care. She'd probably just laugh. Though I would like to sit on the couch with her, and select profiles, just to sort of see her perspective, see what she thinks. (James, straight male)

Although he laughs it off and suggests she would not care, we can see, even in this brief statement, the potential for awkwardness and trust issues when engaged with GSNA-based research. There is a pervasive norm of deleting the apps when in a monogamous relationship, and so any downloading or re-downloading of the apps may be seen as a sign of infidelity. While it is outside of the scope of this article to address that finding specifically, future research should remain attentive to the "mononormative" (Willey, 2016) affordances and norms of GSNAs.

Appnographic research needs to account for the unique experiences and perspectives that these researchers who are not GSNA users bring to the project, and how that may affect the direction of the research. In our interview with Emily, one of our RAs, she noted that she was an outlier in her friend group as someone who did not use GSNAs, which placed her in a complex position vis-à-vis power:

> So, I think that that was a huge difference for me is that, and that's something I actively tried not to do, but it was that sense of that whole power, that relationship that was happening; the idea that I was the interviewer, and I was almost judging, which I obviously wasn't. [. . .] It may have been looked a lot different if I could have said, "Oh, I did that, too" and "This happened to me, too." It might have looked really different had I been an app user myself and been able to relate in that sense, even though I could relate.

Emily notes here that because she was not a GSNA user, she was worried that her interviewees would think she is judging them and their experiences, especially around sex and dating. Furthermore, she notes that if she had shared a common experience with her interviewees as GSNA users, the tenor and direction of the interviews may have changed. Emily's status as an "outsider" potentially unencumbered her from conventional ways of thinking that could otherwise blinker dating app veterans. This allowed her to bring a "fresh perspective" to data collection and analysis that could lead to novel insights. At the same time, her practical inexperience posed a risk of leaving certain taken-for-granted assumptions that constitute the emic perspective of dating app users unexamined. It could also engender a reticence in participants to disclose certain aspects of their dating app use, particularly those more contentious or stigmatized practices, due to the concern that she might simply not "get it." Stated differently, to the extent that GSNA users share a common set of priorities, norms, sensibilities, and experiences, they constitute a distinct social group to which researchers can occupy different "membership roles" (Adler & Adler, 1987), each with specific methodological implications. Remaining reflexive about these implications—that is, "engaging in an explicit, self-aware meta-analysis of the research process" (Finlay, 2002, p. 531)—is critical for ensuring trustworthiness of the research (Shenton, 2004).

Emily's reflexivity on her potential to judge her interviewees suggests an important point about researcher familiarity: there needs to be a reflexive mechanism built into the research design to ensure that appnographic research does not reproduce sex-negative or other stereotypes about GSNA users. This could mean that some members of the research team need to be current or former users, or that the researchers should check their interpretations of the interview data with the research participants in order to generate the rich narrative data necessary to have a strong understanding of the social and cultural impacts of GSNAs. In the context of appnographic research, reflexivity can also entail critically examining one's own assumptions about how the technology works and is taken up in practice by users. Personally (re)acquainting oneself with the technology can be useful in this regard, as the experience of Matt, one of our gay male researchers, helps illustrate. He noted "before I started doing my first interview, I downloaded Grindr because I wasn't familiar with it anymore. So, I made a profile and just sort of interacted on that space for a few weeks before the start of interviews, just so I had a good sense of how it worked." Matt used to be a regular user but had since mostly used Scruff as it provided more of what he was looking for as a GSNA user. Important here in Matt's experience is the length of time on the app and the level of engagement. By habituating Grindr back into his regular GSNA use, he was able to develop a more intuitive and embodied sense of how Grindr operates, which proved useful in interviews. Given how frequently updates are made to GSNAs, often with little to no publicity, researchers should perform at least a cursory "scrollthrough" periodically to see what changes, if any, have taken place.

Recruitment

There are some significant elements to consider when recruiting participants for app-based research, especially when it involves GSNAs, or other types of relationship-bound (sexual or otherwise) interaction. Previous work in the area of GSNAs (Filice et al., 2021; Petrychyn et al., 2020) has used a matching technique where researchers would interview individuals who matched their own sexual identities (e.g., straight men interviewing straight men and gay men interviewing gay men). This approach was adopted in order to encourage respondents to provide honest interpretations of their participation in GSNAs, as there was the potential for interviewers and interviewees to have shared experiences. On the whole, we feel like this approach was successful, as many of the interviews conducted by our RAs were full of rich data.

Ethical questions around recruitment are not as simple as being transparent about one's purposes for being on the app. Those RAs who used dating apps to recruit participants (in this case, our queer RAs mostly) found that transparency about being on the app for research was not necessarily read as a matter-of-fact statement. Marilyn, a queer woman RA, noted that potential participants would question if she was "for real doing a research study, or is that just a way to get girls?" This pick-up line phenomenon, where dating app users perceived our research assistants' statements on their profiles about being on the dating apps for research as mere pretense, poses significant methodological and ethical concerns for using dating apps as a means of recruitment. Users' suspicions point to a fundamental conundrum: despite best efforts to separate research and intimate activity, GSNAs' erotically-charged atmosphere heightens the likelihood of these boundaries becoming blurred. Researchers have only their self-discipline to prevent them from swiping through profiles or reciprocating the romantic or sexual overtures they are almost guaranteed to receive. Careful consideration and management of these risks are required to protect the wellbeing of participants and integrity of the research.

When we consider the dynamics of researcher app use and profile creation in tandem with methodological considerations of how interview pairs are constructed, our research plan becomes even more complex. Here, we can contrast gay male and straight male recruitment as a way of demonstrating the elements researchers must consider. Recruitment for gay men can happen with relative ease in-app. Even when creating a researcher profile, these men are looking for other men and the researcher is likely to be able to use their own presentation and positionality as a gay man to recruit participants without violating the norms of (re)presentation in the app space. This is not true for straight men, since a profile of a straight man will not display for other straight men. The researcher must then develop other means of recruiting straight men to the study which might include the researcher's peer group (Cousineau et al., 2021).

Identity-matching can also help in establishing mutual trust and feelings of safety, particularly for folks from marginalized communities. Given the various stigmas around sex and sexuality, queer dating app participants might be hesitant to share their experiences with someone they perceive as straight. One of our RAs learned this after conducting their interviews. Asked by Johnson what they learned in this process, they responded:

> I learned that I sound straight on the phone. [Johnson chuckles]. . . One of the [interviewees] is a mutual friend of mine. And I guess after I had conducted the interview, she reached out to our mutual friend. "Did you just hook me up to do an interview about my sexuality with a straight person?" And the friend came back to me and was like, "Apparently, you sound super straight." She was like, "If only she could see you, then she would know that that's not necessarily the case." (Marilyn, queer woman RA)

Marilyn's experience highlights the power differentials at play, where marginalized users could feel uncomfortable discussing their sexuality with heterosexual interviewers given the elevated risk of homophobia and heterosexism that they may otherwise attempt to insulate themselves against in professional research contexts.

Hence, whether working with dominant or marginalized gender and sexual populations, the ways that interviewer and interviewees are paired matters. With respect to data quality and completeness, there are benefits and drawbacks both to participant–researcher identity congruence and incongruence. We hesitate to make sweeping prescriptions—pairing queer women researchers and like participants is not strictly superior in all cases, nor, for that matter, does social positionality entail a certain experience, disposition, or politics (Rasmussen, 2006). Further complicating matters is the fact that gender and sexuality are less than perfectly legible through outward visual and behavioral cues, meaning perception of similarity is sometimes contingent on both researchers' and participants' disclosure of their identity (Clair et al., 2005), as the above quote from Marilyn demonstrates. The benefits of increased rapport and transparency hence must be carefully balanced against the risks of "outing" oneself. Internecine animosities between marginalized groups who are frequently lumped together, such as bisexuals and gay men/lesbians (Roberts et al., 2015), as well as intersecting power relations along dimensions like race and class, also trouble assumptions of cohesion and solidarity. Nevertheless, there is clear utility in being open about the social and power dynamics at play within the research interchange and giving them due consideration in analysis.

Conclusion

In this article, we re-visited, re-considered, and re-organized appnography as a method for studying GSNAs. Using interviews of the research team involved in a large study of GSNAs across sexual and gender identities alongside data collected in the original study, we suggest a reformulation of the elements of appnography proposed by Cousineau et al. (2018). We propose two axes, *design* and *participant* considerations and the inclusion of a third, new set of *researcher* considerations. While we have maintained Cousineau et al.'s (2018) five original considerations, we divide them into design considerations (including technological architecture and temporality) and user considerations (digital versus "real"; profiles; and space, place, and community). Notable here is the transition from "contextualization" to Light et al.'s (2018) concept of "technological architecture" that better frames the structural and affordance implications of the apps themselves. The division of these elements allows the researcher using appnography to apply a more specific lens to aspects of the research project and gives appropriate attention to the technological affordances of app construction and algorithms, as well as people, presence, and space.

Most significant in this refinement of appnography is the addition of researcher considerations. stemming from the need to address issues of participant recruitment as alongside researchers' current and/or former use of the apps. These factors intersect with project outcomes and include decisions around how best to match researcher sexual and gender identities with those of the participants. The type data collected when *matching* participant and researcher sexual and gender identities (e.g., gay men interviewing gay men) is different from data collected without considering these elements in the matching.

We hope that through this expanded and reformulated appnography framework, qualitative researchers will find a robust methodological approach to researching complex human and technological spaces. Gaps remain in our knowledge about apps and app use especially as it relates to the experience of trans users, older users and users with disabilities. . This methodology provides the opportunity for researchers to design studies that will actively work to look beyond the experiences of privileged users to inform our understanding of how sociocultural contexts shape GSNA and other app uses. .

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ORCID iD

Corey W. Johnson https://orcid.org/0000-0002-6918-3787

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Author Biographies

Corey W. Johnson is the Karla A. Henderson Distinguished Professor of Social Justice at the North Carolina State University. His inquiry focuses on power relations between dominant (White, Male, etc.) and nondominant populations in the cultural contexts of leisure and is also a qualitative research methodologist. He has coauthored seminal texts such as *Fostering Social Justice for Qualitative Inquiry: A Methodological Guide*, *Promiscuous Perspectives: Sex and Leisure*, and *Contemporary Issues in Leisure*. His current funded projects focus on technologically mediated social relations, including decreasing gender-based violence on dating apps like Tinder, Bumble, and Grindr. He enjoys hiking, camping, cooking, yoga, meditation, travel, and spending time with his husband of more than 20 years and Frenchie Sedgwick.

Dr. Luc S. Cousineau is the co-director of Research at the Canadian Institute for Far-Right Studies and an instructor in the Department of Recreation and Leisure Studies at the University of Waterloo. His work focuses on the intersections of masculinities, technologies, and power, and the influences of far-right masculinism on social structures and youth.

Dr. Eric Filice is a postdoctoral scholar at North Carolina State University. An interdisciplinary scholar at heart, his research interests lie at the intersections of subjectivity, sexuality, embodiment, digitality, public health, and qualitative methodologies. He is also co-author of Health Promotion in Canada: Theory and Practice in Context (Oxford University Press).

Diana C. Parry is professor in applied health sciences, Diana's research focuses on the personal and political links between women's leisure and women's health. This includes exploring the medicalization of women's health and the prevailing assumption that health experiences can be understood solely through the documentation of physiological causes and technological solutions, the dominant focus of most research on women's health. Her research spans gender ideologies and roles, navigating the concept of leisure within a social and cultural context.