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Layers of Marginality: An Exploration of Visibility, Impressions, and Cultural Context on Geospatial Apps for Men Who Have Sex With Men in Mumbai, India

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Abstract

Some social technologies can reduce marginality by enabling access to individuals and resources through increased visibility and opportunities for social connection, but visibility carries risks that may be outsized for some marginalized populations. This article reports on a study of location-based social apps (LBSA) used by men who have sex with men (MSM) in Mumbai, India, a legally and socially marginalized population. LBSAs, which facilitate interaction and social connection between physically proximate individuals would seem at first to be a valuable resource in reducing marginality for MSM by connecting otherwise isolated individuals with each other. We explored this from a socio-technical perspective through a qualitative study of MSM in Mumbai, India, who use LBSAs. Results suggest that, as in other contexts, using LBSAs presented formidable risks and challenges such as information security and identification by others, but also could serve as a valuable resource for connecting MSM to each other.

Keywords

marginality, India, LGBTQ, social media, self-presentation

Marginality, defined by Gatzweiler and Baumüller (2014) as exclusion from social connections, resources, and opportunities to fully participate in mainstream society, can negatively affect LGBTQ+ individuals everywhere, but especially in India where same-sex sexual activity was illegal until September 2018 (*Times of India*, 2018) and LGBTQ+ identities are often stigmatized in families and communities (Li et al., 2017; Rhoton et al., 2016). In Gatzweiler and Baumüller's (2014) terms, this can lead to social marginality that becomes economic, educational, and political, as people may be ostracized from their families and communities (Dasgupta & Gokulsing, 2013). These individuals may feel marginalized both from other LGBTQ+ people as well as their families and the broader population, leading to isolation, shame and risky behavior (Banik et al., 2019; Chakrapani et al., 2017; Ekstrand et al., 2017; Wilkerson et al., 2018).

Nonetheless, many LGBTQ+ individuals in India effectively manage their marginalized status. Several Indian cities have growing, progressive LGBTQ+ communities who connect with each other using social infrastructures, civil society organizations, and digital technologies (Rhoton et al., 2016; Roy, 2003; Shahani, 2008). These render LGBTQ+ people visible to each other in subtle ways unlikely to be noticed by the broader population (e.g., Chauncey, 1994), allowing for social and sexual relationships, health education, community support, and other ways of reducing social marginality (Dasgupta, 2017).

Even for those with access to these resources, however, there are risks to making one's LGBTQ+ identity visible, which can result in ostracization, shaming, and abuse (Li et al., 2017). These risks may be amplified for commonly used digital technologies that are location-aware, which we call "location-based social apps" or LBSAs, such as Grindr, an internationally popular app for men who have sex with men (MSM) that shows thumbnail photos (and profiles, if tapped) of nearby users. Being recognized by a neighbor on

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Grindr, for example, could be substantially more consequential than meeting a far away stranger in an online chat room.

From the standpoint of marginality, LBSAs raise questions that are fundamentally socio-technical. It is through the interplay of the broader social context, LBSA features and social practices that MSM must consider the risks and rewards of sharing information, interacting and meeting others in ways that stand to influence their marginalized status for better or worse. In this article, we consider three questions that explore MSM's use of LBSAs in Mumbai, India.

Background and Literature Review

Adopting a socio-technical approach, we recognize that technologies are integrated into existing social practices and structures, and that it is often these larger structures that have caused marginality in the first place (Gatzweiler & Baumüller, 2014). Moreover, structures enabling the visibility of marginalized or stigmatized people only to each other, such as bars or bathhouses in the MSM community, evolved long before LBSAs and other social technologies (e.g., Chauncey, 1994). In considering LBSAs, there is a good reason to believe these technologies will be integrated into existing social and sexual practices, as they have been in other contexts (e.g., Bond, 2011; Mowlabocus, 2010a). We know little about how this plays out in the Indian context, however.

Social Status and Privacy

Prior work in western contexts has shown that education and social status are important mate characteristics for gay men (Ha et al., 2012). Thus, the ability to differentiate higher and lower status profiles is likely important. As Dasgupta (2017) observed, one way this manifests in India is smart phone access. Grindr, because it requires a smart mobile phone not accessible to much of the population at the time, was seen as a "classed app" of higher status than Planet Romeo, a popular competitor that did not require a smart phone. Even as smart phones proliferate, however, socio-economic divisions will not likely disappear. As much LBSA interaction occurs through text chat, language may also be a salient point of division. Spoken language is complicated in India. Each Indian state has its own language, along with regional dialects. Hindi and English are commonly spoken and understood in most parts of the country. English (particularly in Mumbai, given its British colonial roots) is often the primary language spoken by those who were educated in private English-medium schools, are considered better educated, and are of higher socio-economic status, a legacy of India's colonized past (Chand, 2011). English is often a shared language, but it can also exclude or further marginalize those who do not understand or speak it well. As effective use of social technologies depends on the ability to interact with others, social practices around language could exclude some users, even when systems support multiple languages.

A second salient socio-cultural property of India is overpopulation. People rarely live alone or expect privacy, so meeting or experimenting sexually with others can be challenging (Larson & Medora, 1992; Shahani, 2008). As with language and smart phone ownership, Dasgupta (2017) notes how access to privacy can also be a class issue, with easier access for those of higher socio-economic status. In some ways, this is not unique in that men in cities like 20th-century New York, very often sought sexual encounters in public places like restrooms or bathhouses (e.g., Chauncey, 1994). It is more common for men in Western cultures to live alone, but many LBSA users in these contexts indicate in their profiles whether or not they are able to host an encounter at their place (Mowlabocus, 2010a). In India, however, overcrowding can make privacy particularly fleeting, and family dynamics can mean family members are simply more involved in each other's lives than in more individually oriented cultures (Arora & Scheiber, 2017; Shahani, 2008).

These properties, combined with MSM-specific apps that allow for visibility of others, can affect attitudes, self-presentation, and perceived marginalization. We asked,

> *RQ1*: How do attributes of the Mumbai socio-cultural context affect the use of LBSAs by MSM?

Visibility and Layered Spaces

Marginality and geography have long been intertwined, with unequal access to resources such as prime land or urban cores often a precursor to social, economic, or geographic marginality (Gatzweiler & Baumüller, 2014). Social media and the internet can reduce these barriers, allowing access to previously unavailable cultural and social capital (Gonzales, 2017; Gray, 2009).

LBSAs, which limit access to or interaction with others based on location, may affect marginality differently; however, in that they can serve to essentially reconfigure (but not eliminate) geographic barriers to participation (Hardy & Lindtner, 2017). Blackwell et al. (2015) and Ahlm (2017) argue that LBSAs create dynamically bounded "layers" that sit atop physical spaces. Visibility in these layers relies on what DeVito et al. (2017) call "visibility mechanisms." These are the principles or designed attributes of a space or platform that render a person's behavior visible to others in that environment (Pearce et al., 2018). On LBSAs like Grindr, one's visibility (and the boundaries of the geographic region in which one can be seen) is a function of the density of other users, in that the closest set of users are shown regardless of their actual distance away. In sparsely populated areas, LBSAs may show others' presence, but their distance from the user may foreground or exacerbate perceived marginality (Hardy & Lindtner, 2017). In more densely populated areas, LBSAs can provide opportunities to interact with those nearby, but users risk recognition by neighbors or

other contacts (Blackwell et al., 2015; Couch & Liamputtong, 2007; Dhoest & Szulc, 2016).

This presents a paradox for marginalized individuals using LBSAs. Being out and open about one's MSM identity, for example, has long-term health benefits, and sharing identifying information can help in meeting new people (Mustanski et al., 2011). Still, sharing identifying information can result in inadvertent outing or social shaming (Birnholtz et al., 2014; DeVito et al., 2018; Linabary & Corple, 2017; Pearce et al., 2018). Indeed, people in conservative or otherwise unsupportive environments have strategically restricted information flow, such as by creating alternate profiles or using multiple social media platforms to show different aspects of one's identity to different audiences (Carrasco & Kerne, 2018; DeVito et al., 2018).

All of this suggests that LBSAs may indeed provide access to connections that reduce marginalization in some social contexts, but could be risky. Building on work by Fritz and Gonzales (2018) examining transgender users' assessment of the risks and benefits of sharing identifying information online, we wondered how MSM in an environment where they face significant stigma consider the risks of their visibility to nearby LBSA users:

> *RQ2*: How do MSM in Mumbai consider their own visibility on LBSAs and risks inherent to sharing identifying information?

Community Boundaries

While community building and establishing social connections are often not the intended purpose of LBSAs, our preliminary observations in Mumbai suggested LBSAs were appropriated in this way. Compared with online communities and other social technologies that could provide access to resources that reduce marginality (e.g., Clark-Parsons, 2017), however, we argue that LBSAs may carry more risk. Where groups and discussion boards let groups police their own boundaries by regulating who joins the community and calling out harmful or counternormative public behavior, LBSAs facilitate one-on-one interaction with mostly unknown individuals and are not designed for community (Race, 2015).

Indeed, a significant focus of literature on online dating has been on reducing uncertainty around the veracity and trustworthiness of others (Duguay, 2017; Gibbs et al., 2011). Moreover, evidence suggests people do not always have a good understanding of how they are rendered visible or potential risks undertaken on different technologies (DeVito et al., 2017; Litt & Hargittai, 2016). In addition, cues and signals used in forming impressions might differentially affect marginalized individuals. We know, for example, that people with potentially stigmatized identities such as HIV positive status (Warner et al., 2018) or certain racial identities (Daroya, 2017) may be ostracized or harassed on LBSAs

in ways that exacerbate marginality, even in ostensibly supportive spaces.

By creating layered spaces as described earlier, LBSAs can on the one hand enable connections that cross the boundaries of extant social communities, but on the other hand may simply serve to render MSM members of these extant communities newly visible to each other. How people consider community boundaries in their interactions with others thus has significant consequences for marginality. We asked,

> *RQ3*: How do MSM in Mumbai form impressions of others and assess community boundaries?

Methods

To explore these issues, we conducted a qualitative interview study with 35 MSM in and around Mumbai, India.

Participants

The 35 participants in our study came from varied socio-economic backgrounds, with purposive recruiting handled by an experienced recruiter through flyers and social media advertising. Participants' mean age was 25 years (median: 25; *SD*: 4.8; range 18–35 years). Twelve participants identified as bisexual, 21 identified as gay, and 2 identified as MSM. Most ($n=24$) were "out" to at least 1 person they knew about their MSM identity, and 11 said they were not out at all. Participants reported their relationship status as single ($n=23$), in a dating relationship (typically with another male, $n=8$), or married to a woman ($n=4$). All of our participants were literate and at least had middle school education. Ten participants had completed their graduation (undergrad); 3 had a diploma, 10 had a post graduate degree, 7 had completed their higher secondary school certificate (HSC; Grade 12); 3 had completed their secondary school certificate (SSC; Grade 10), and 1 had completed middle school.

Procedure

Interviews were conducted in a private room at the research site by one of three interviewers who were trained on the interview protocol together. Interviews were semi-structured in nature, with the protocol used to guide the conversation. The order of questions was shifted to accommodate the flow of conversation, and interviewers probed more deeply or skipped questions depending on the participants' experiences and responses. All interviewers were tri-lingual, and participants could choose to be interviewed in English ($n=17$), Hindi ($n=12$), or the local language, Marathi ($n=3$). For participants who indicated comfort in multiple languages and did not express a preference ($n=3$), the interview conversation often shifted between English and Hindi, as is common in Mumbai conversational speech. Prior to the interview,

participants were given a copy of the consent form in their preferred language, the study was explained to them and they were asked if they had any questions. Interviews lasted 60–90 minutes, with a few that were longer. Participants were paid 500 rupees (~US$7) for their participation.

Interviews were recorded and transcribed in their original languages, and then translated into English for analysis. All English transcripts were checked by a member of the research team for accuracy and removal of personal identifiers. All but one member of the research team live in Mumbai and are fluent in all three languages. The local team was involved in the analysis process, so could assist in contextualizing interviews.

Analysis

Analysis was thematic and involved the iterative reading of transcripts by members of the research team, discussing emergent themes and topics, and developing a coding scheme that reflected all relevant topics. Transcripts were then coded by the entire research team, with frequent discussion to ensure consistent application of codes and topics. After coding, the research team aggregated illustrative quotations and used these to develop the structure of the article, in response to the research questions that had been identified prior to the study.

Positionality and Ethics

This study asks questions about sexual behavior that violated India's laws at the time the work was done and could, in some cases, threaten the integrity of participants' marriages. Given this sensitivity, significant attention was paid to risks the study presented for participants. The study protocol was developed by the first author in collaboration with the local team, who were involved in every phase of the work. All members of the research team are either self-identified LGBTQ+ individuals (majority) or allies. The protocol was reviewed by the Institutional Review Board at the research site, an established LGBTQ+ not-for-profit, which is comprised primarily of members from the LGBTQ+ and HIV research community in Mumbai. To protect privacy, no identifying information was collected from participants, who could sign the informed consent form with only their initials. Any inadvertent mentions of first names and locations were also removed from transcripts prior to analysis. We and the IRB believed that risk to participants, while not negligible given topic sensitivity, was not significantly greater than risks already taken by engaging in sex with other men in Mumbai.

Limitations

As with any exploratory study, there are several limitations to bear in mind. First, this article focuses on a specific population of people willing to participate in a study in one metropolitan area of India, so should not be taken as a general description of all Indian MSM or even all Mumbai MSM. For example, respondents to our recruitment did not include those who reported sex work, those who identified as HIV positive, or those who reported engaging in anonymous sexual encounters while under the influence of drugs (known as "high fun"). It is reasonable to assume that all of these populations would have different experiences from our participants. Second, the sample size and sampling method are both inadequate to make definitive causal or correlational claims. Where relationships between factors are observed, they should be interpreted as trends that merit additional research. Third, we focused on men in this study because they use LBSAs more than do women or those of other genders, but the unique needs of those individuals are an important topic for future research in this space.

Results

We structure our results according to our research questions.

Socio-cultural Context

Our first research question asked about how elements of the Indian socio-cultural context affected participants' experience. What we saw was strikingly similar to what has been observed in other contexts, in that identifying others' social status was important to participants and in that the availability of privacy was of significant value. There were some context-specific variations on these patterns, however, as we describe here.

Language. The first contextual attribute that emerged as important to participants was language. In this complicated setting where so many spoken languages are common, LBSA users must first find a way to understand each other at all. A few participants said that they were happy to speak in any language. As P23 (25 years, Bisexual), who is broadly conversant, said (NB: "person in front" refers to whomever he is chatting with),

> Mostly in the start I talk in English and if the person in front does not understand English then I talk in Hindi, and if the person in front is Marathi then I talk with them in Marathi, and if he is Gujarati then I talk in Gujarati.

More consequentially and more commonly, however, given the common role of English as a signal of education level and socio-economic status, language was used in assessing others' profiles. For many participants this affected their impressions. For some, lack of English proficiency could be endearing. P11 (26 years, Gay), for example, described chatting with a man he met on Grindr while traveling, who mixed Hindi and English and repeatedly misspelled "cock" as "coca":

I replied even "you look cute" and he wrote "thenku," and he wrote that "you are sexi," I instead of Y, "where are you right now?," and it was English Hindi mixed. But I smiled because I liked it, and he said that "give me your coca pic," and I started laughing. I replied, "not having coca pic" and he said that "I want to see your coca pic, how big is it? . . ." But I found this boy cute and gave him my number but he never messaged me yet. And later on I told my friend and he laughed a lot.

Often, however, language could exclude or further marginalize. The inability to converse or compose a profile in coherent English was, for a few participants, a signal of lower status. P9 (34 years, Gay), for example, said, "If somebody is using wrong grammar or if somebody is not fluent in English it's a great turn off. Big-big turn off." Asked why he would not want to talk with somebody who only speaks Hindi, he said, "it turns me off. It feels to me like this person is from low standard and we may not match." Other participants expressed concerns that people who spoke only regional dialects might be involved in illicit activity or be trying to steal their pictures. The overarching theme here, however, is that participants relied on the cues available to them to assess others' social position. This sorting process is common to many dating or social matching scenarios, of course, but the combination of the need to form quick assessments in text chat and the status of English in Mumbai arguably renders language particularly salient on LBSAs here.

Close quarters. The lack of physical privacy from family and others was also a salient factor in participants' experiences, and particularly, the very time-limited nature of physical privacy when it did happen, often led to a sense of urgency. As Mowlabocus (2010a) and others have described in other contexts, the effect of this was sometimes the prioritization of fleeting encounters over more meaningful relationships. In India, moreover, where crowding is arguably greater and people are more likely to live or be very involved with family, the windows of time were often more fleeting and valuable.

Living in close quarters meant participants had limited physical privacy, including their phone screens. For example, most closeted participants worried that their families would discover their sexual interests so avoided visible behavior at home that might be too overt, which often included using LBSAs at all when others were around. P14 (27 years, Bisexual) said he used Grindr regularly but, "if my family is at home then I can't use it," and also said that he does not share his phone with others, which is common in India, "since it has Grindr app and if my brother, his wife or my wife opens it then it might cause a problem."

In this context, having MSM friends or contacts could also be problematic in that they might be visible to friends or relatives in the neighborhood. Some participants navigated this closeness by simply pretending contacts from Grindr were male friends, who—given close quarters—would commonly

be introduced to one's family. Even for participants not out to their families about their sexuality, for example, many who lived at home said they would introduce their MSM contacts to their families or even, to married participants, their wives. P8 (23 years, Gay) said,

I am not open to my family so I am little scared that suddenly any guy if they come here and they speak up about me to any of my straight friend or to those persons who don't know about me . . . [but] when I get close to them, I take them home and make them meet my family, which is not a tension.

This experience highlights the subtlety of how marginality may be experienced. That is, one is not just trusting that a person will not harm them, but also that they will perhaps play a part in what Goffman (1959) calls a team performance of a particular identity (or a team avoidance of an explicitly gay identity).

A second implication of close quarters and limited privacy was that privacy itself could amplify both desirability and desire. While prior work in Western contexts often suggests that the ability to host might be a persistent state if one lives alone or if roommates are away on vacation, our participants experienced short windows of privacy with a strong imperative to take advantage of it. Permanent or temporary possession of a private place was often considered a plus in assessing others' profiles, and something to advertise in one's own profile. For example, many participants reported updating their usernames to make it immediately obvious when they were "with place," as this was typically described. On Grindr, writing this (or "wp") in the username field made it visible on the display of thumbnail images, with no need to tap further.

There was evidence that this was effective. P33 (27 years, Gay), for example, talked about a nearby man who became more interested and began replying to messages when P33 said he had a place:

There was one guy who lives very close by to me . . . I had messaged him so many times. He had never replied me. Once I had place so I had written "with place" and within 5 minutes he had messaged me . . . They are like, "oh you have a place, ok fine, ready to come," because they are not connected to looks or anything. They just want to really [have sex].

The scarcity of private spaces also meant that the possibility of privacy could motivate risky behavior. P2 (19 years, Gay), for example, described talking with a guy around midnight about meeting up, as the guy said he would soon have privacy at his family's place. When P2 arrived, however, the guy said his relatives were still there, so P2 had to wait. P2 wanted to enter the lobby ("reception") of the guy's building, but the guy would not let him in. After an hour, the guy was not responding and P2 felt he had made a mistake. As he describes it,

So he told me that, "I have relatives at my place right now so please wait for 10-15 minutes." So I thought of getting into the reception [of the guy's building] so I can meet him over there. But he did not let me in. He was like, "no, wait outside. I will take you to somewhere else and then we can come [back to his place]." I said okay . . . I was waiting for 15 minutes. Then again I called him. He said "please wait, they are going." It took me till 1 o'clock I was standing outside and this fellow was not even responding to my call after a point of time. And I was like, I did a very big mistake. He was like, "you have to wait till 2 o'clock." As you know last train is at 1:40, I can't wait. It was not safe also because that area is not so cool.

Viewed from a socio-technical standpoint, we see how these elements of socio-cultural context alter how elements common to many dating contexts, such as social status and privacy, play out here. On the one hand, LBSAs allow for connection to others and for conversation in multiple languages. On the other hand, extant social structures and practices around the use of English help to replicate preferences for higher status mates seen in other work. With regard to physical privacy, we again saw replication of behavior seen in other contexts, despite risks participants took in doing so, given just how fleeting privacy often was for them or how involved their families were in their social lives. As in western contexts, we saw LBSAs allow users to not just find others nearby who are interested in men, but to do so in a manner that allowed for rapid signaling and exploiting of fleeting moments of physical privacy. On the one hand, this meant opportunistic connections that might otherwise not be made, but on the other hand, the possibility of opportunistic sex in a temporarily private space motivated risky behavior and could result in further perceived marginality.

Visibility, Risk, and Control

Visibility mechanisms are often an important difference between physical and online spaces. Designers may deliberately or inadvertently create asymmetries, such as by making users' profile photos visible to all other users, including those who have not themselves shared photos. One effect of these asymmetries here is a perceived loss of control. LBSAs opened participants up to what they saw as significant risks when it came to sharing personal identifying details, such as their face photo or links to other social media accounts.

Participants recognized that it was often necessary to share a photo. P7 (32 years, Bisexual), for example, said without one: "response will be very low because generally people don't communicate with or interact with DP[display photo]- less people." Given the ease with which photos can be copied, however, sharing a photo meant sacrificing control, with the possibility that one's photo could be stolen and used without the owner's knowledge. The photo's subject could then be recognized without even knowing to whom or where they are visible. This creates significant vulnerability and many participants said they feared misuse of their

photos. Some drew on direct experience, such as P24 who said, "once I went to my village . . . with my friends from Mumbai. So these people of [village] misuse pictures of Mumbai people on Grindr" (20 years, Gay). That is, people in his village copied the profile photos of his visiting friends and used them as if they were the thieves' own, after the friends left the village.

Other participants described negative experiences involving control over visibility after sharing identifying information, such as photos or social media accounts. P2 (19 years, Gay) said that he included a link to his Instagram profile from his Grindr profile, which another man used to identify him. The man then threatened to out him on Facebook:

Because I had linked my Instagram he came to know about my name and everything like that and he started, "I have your picture, I have screen-shotted your [Grindr] profile and I will be posting it on Facebook . . ." So I was like, "dude just chill, I can do the same thing also and I never wanted anything from you so just go back and do your work." I just blocked him. So this makes me concerned about sharing more private information . . .

All of this is further exacerbated on LBSAs like Grindr by the influence of sexual desire, which may impede decision-making (Ariely, 2008). P12 (18 years, Gay), for example, said he felt sharing his phone number was sometimes a mistake: "But sometimes mistake happens and then if you are horny, you don't feel about anything else. It happens and then I shared it but nothing as such happened with me."

A second sort of control participants described was over offline disclosure. One can hide one's own use of technology to meet other MSM and hide one's own identity, but new risks arise when those other men are nearby and aware of the user's identity and location. One participant said he feared blackmail, having heard of cases where somebody on Grindr would threaten to come to a guy's house and out him to his family: "[They will say] 'I want to do something [sexual] with you.' If you refuse, they will say, 'I will come to your house and tell [your family about your sexuality]'" (P18, 32 years, Bisexual).

These examples show how visibility through the layers created by LBSAs create risks as identifying information moves between online and offline layers and is visible to both known and unknown people. This permeability presents a paradox and an instance of privacy calculus that the possibility of strong local ties brings with it the possibility of further fear, isolation, and even shaming or ostracization.

Amplifying visibility. As has been seen in other contexts (e.g., Miller, 2015), we also saw LBSAs amplified offline visibility in spaces already known to be meeting grounds for MSM in Mumbai, such as public bathrooms and local trains. P8 (23 years, Gay), for example, said he would update his Grindr profile when he is on a train so he would be visible to fellow passengers. P3 (21 years, Gay) described an experience he had on a local train where the combination of Grindr and the

behavior of another man P3 did not think was gay affected visibility and their potential for interaction:

> I just got into the train and I got in from [Suburb] and one fellow walked in. He just walked in. Because I had used a lot of makeup and all stuff, so it was quite visible that I am gay. There was only one fellow with me although in the whole compartment and there was no one [else] . . . So we gave each other eye contact and I don't know he took his phone from somewhere. And he was having ear phone in his ears. And then he just checked his phone and I never knew that this guy would be on Grindr because he [had] a really nice personality. He was not looking like a gay. He was definitely a Muslim guy with a beard. He [had] a very well built personality as a straight guy only. But I saw that he is using his phone constantly. And he just gave me a look. So I was like what is this happening? Suddenly he started smiling at me . . . And then [Suburb] station came and he wanted to get down at [that station]. And then he just touched me on my knee like, "okay, I am going right now." Then I opened my Grindr and then I saw his profile.

In this example, Grindr both amplifies the visibility of the other man's interest in men, which was not clear to P3, and provides a way to stay in touch afterward which would otherwise be difficult for strangers in a large city. This example also highlights how the intersection of the man's Muslim and MSM identities might further marginalize him or render him less immediately visible as MSM.

Shared Identities: Assessing Others

LBSAs focused on individual mechanisms for meeting new people for social or sexual encounters essentially present the challenge of needing to monitor community boundaries every time one chats with somebody new. This means being able to quickly reduce uncertainty and assess the safety of an interaction, and participants described several strategies and cues they used for doing so, of which we present two salient examples.

First, we found that geospatial layers created by LBSAs were valuable not only for finding sexual and romantic partners, but also served as a resource for meeting others that expedited integration into an offline community. This is also not novel behavior as gay bars and technology have facilitated social connections between MSM before. What is interesting here is that it occurs in a very different cultural context.

This was particularly true in cases where individuals had a shared offline identity. For example, P12 (18 years, Gay) met his first gay friend, a student at the same college, on Grindr:

> . . . we started chatting to each other because we were in same college and he was my first friend, first gay friend. Still we are best friends and then we hooked up and everything happened. So that was a very good experience of my life like using Grindr.

P2 (19 years, Gay), who works in hospitality, said that he often tried to find people on Grindr who also work in hospitality. Once he recognized a manager from the hotel he was working at and was able to leverage that shared identity for professional support:

> I was training in one of the hotels and the assistant manager of that hotel was on Grindr and that's how I got a little more comfortable in the hotel because he introduced me to a couple of more people. He made sure that I don't get bullied. It was nice. It was a nice experience.

These examples show how the mere fact of sharing an interest in men was often insufficient for connection. Participants relied on other shared identities to assess and connect with others. For those who shared these identities with others nearby, there were clear benefits. For others who did not, this could potentially be further marginalizing.

Discussion

We began with questions about the relationship between LBSAs, the nascent Indian gay dating app culture, and marginality for MSM in Mumbai, India. In many ways, as described earlier, what we found was similar to gay dating cultures in other places, with some variations for the local context. We believe, however, that there are elements of our results from which we can derive implications for the use and study of LBSAs by marginalized populations. In Table 1, we show examples of salient technical features and social practices that arguably affect the experience of marginality. In this section, we unpack those examples and discuss their implications.

Socio-cultural Context

Social technologies can provide interaction opportunities that connect marginalized people who may not be aware of each other or otherwise have opportunities to connect. Indeed, many have observed how email lists, online groups, and dating platforms were fundamental in initially connecting MSM in India (Dasgupta, 2017; Roy, 2003; Shahani, 2008). As Dasgupta (2017) further notes, however, these technologies can also be used to exclude.

Even when marginalized people do gain access to technology itself, extant social practices can further exclude. For example, others have observed exclusion by race or ethnicity (Daroya, 2017) on LBSAs. Payne (2007) and Cassidy (2015) further discuss "identity territoriality," whereby, some individuals lay claim to certain traits as they define their own identities often in ways that exclude others. In Mumbai, we observed a similar phenomenon with language. While smart phones and Grindr support interaction in multiple alphabets and languages, many participants expressed a clear preference for those who could converse proficiently and who had composed their profiles in English as a sign of social and educational status. In contrast to

Table 1. A Socio-technical Breakdown of Features and Practices Observed as They Relate to Marginality.

	Technical features	Social practices	Effects on marginality
Socio-cultural context			
Language	Multi-language support on smart phones/increased affordability	English as a class/education marker	Non-English speakers can be further marginalized.
Overcrowding/ Fleeting privacy	Ability to see people nearby, talk soon	Privacy can amplify desire, desirability, and risk-taking	Fleeting encounters and risk can increase perceived marginality
Visibility			
Photo sharing	Photos are visible to all nearby users	Impression depends on photo, but photos may be stolen or used to identify	People share photos to reduce marginalization, but fear misuse
Proximity in sexualized spaces	Visibility of and interaction with very proximate other users	Trains and public bathrooms are historic meeting places for MSM	Easier to find and stay in touch with other MSM, which could reduce marginality
Community boundaries			
Shared group identities	Visibility of everybody nearby; lack of community-established boundaries of participation.	People affiliate based on extant group identities	Marginality is reduced but within extant social groups; fewer opportunities for community building

MSM: men who have sex with men.

other traits, English proficiency is a trait that emerges over the course of a conversation. That is, participants did not overtly say in their profiles that they spoke English or not, but—as the examples earlier suggest—this became clear as they chatted.

From a socio-technical standpoint, it is important to realize that this is in part the artifact of a design that foregrounds language particulars like spelling and grammar. As we think about technologies' capacity to reduce marginality in contexts where language itself can further marginalize, it is important to consider this in making design decisions. LBSAs, for example, could rely on other modes of interaction that make language less salient or even provide translation assistance to help reduce barriers and perhaps mask this trait in ways that broaden interaction possibilities. For example, the popular Chinese dating app Blued allows for live video streaming. At the same time, this presents a paradox in that some participants clearly preferred having a way to filter out those with lower levels of education or socio-economic status. Additional work is needed to see if features masking differences encourage unlikely relationships across these boundaries, or merely serve to delay inevitable rejection when those differences become clear in later interactions.

A second socio-cultural influence was the relationship between the nature of physical privacy and the temporality of LBSAs. On the one hand, this was another instance of LBSAs to facilitating immediate encounters between nearby people, as discussed by Mowlabocus (2010a). What was unique here was the strong effect that being "with place" had both on people's motivation to find an encounter and willingness to take risks in doing so, and on how participants felt others formed impressions when they had access to a place. Pragmatically, this is a useful confluence of social practice and technical features. In thinking about marginality, however, there is some question about how this prioritization of

immediacy might impact experience. For our participants, this sometimes appeared to increase their perceived sense of marginality, as with the participant that took risks to try to meet somebody and found himself alone late at night in a not great area feeling like he had made a mistake. At the same time, however, part of grappling with and crafting a MSM identity can be sexual experimentation (Savin-Williams, 2016). In an environment where there may be few opportunities to experiment, LBSAs could facilitate this in a manner similar to the role filled by bathhouses or other public spaces in the past (Chauncey, 1994).

Visibility

As has been described in prior work, LBSAs change the dynamics of visibility, disclosure, and information flows (Blackwell et al., 2015). Much prior work on marginality has focused mostly either on the benefits (e.g., Gonzales, 2017) or risks of visibility through technologies (e.g., Duguay, 2016). Like Fritz and Gonzales (2018), our results suggest tradeoffs and an amplified privacy calculus in considering the risks and benefits of sharing.

One key point here is that LBSAs are spaces with dynamic boundaries relative to the physical spaces they sit atop (Blackwell et al., 2015). While we tend to think of this as a benefit in that it allows people to connect primarily with nearby others, our participants heightened concerns about information misuse highlight a downside of this approach. Rendering visible only those who are nearby means that the behavior of people who are far away becomes invisible. For marginalized people concerned about identification in contexts where it may be easy or common to copy and reuse identifying information, this means that one might be unaware of information being misused either in another geographic area or once one has left an area. These possibilities

merit consideration in discussions of visibility online (e.g., Pearce et al., 2018) and also may impact people's trust in the technology and willingness to share information.

A second consequence of online spaces layered atop physical spaces is that information is differently visible to others and sharing may not be symmetrical. As in other contexts, this was especially significant for MSM in India, because they may be vulnerable to harassment or abuse. Consider this in opposition to a gay bar (Rafalow & Adams, 2016) or chat room (e.g., Shaw, 1997), for example. In the bar, one is fully visible and identifiable to others, but there is some reassurance in that people need to be present in the gay bar to identify or be identified. In online chat rooms, it is relatively easy to hide one's identity, and even sharing photos may not lead to recognition as interaction partners cover a broad geographic range. In contrast to these, one of the purported benefits of LBSAs for marginalized people—the ability to connect with others nearby but while being in a private space oneself—becomes a liability in that one is essentially sharing that "private" space with others nearby who may recognize the user or misappropriate their information. This is, of course, not unique to India but it was quite salient to our participants given the risks of identification.

For marginality, this presents a sort of paradox: one must be visible to reduce marginality through interaction and connection, but that visibility risks local recognition and further marginalization. There may be ways to reduce these risks through design while still fostering connection, such as making it harder to misuse photos, using photo verification technologies as some dating apps currently do, and requiring a verified photo to see others. These barriers may, of course, be too high for some users, so more work is needed to assess these tradeoffs.

Boundaries and Community

The second implication of our findings follows from prior work suggesting that community boundaries, and in particular, the ability to regulate who is part of an online community, matter for marginalized groups such as LGBTQ+ people (Clark-Parsons, 2017; Jackson et al., 2017). The technical and social capacities to collectively police boundaries allows for community protection from outsiders, though, as work cited earlier suggests, can also lead to controversial discussions of who qualifies as a member of a marginalized group.

LBSAs, however, typically lack features for collective enforcement of community boundaries. Rather, anybody can download Grindr and self-identify as a man interested in other men; these apps essentially rely on their users to individually assess prospective community members every time they encounter a new person. The block feature can help one user avoid repeated encounters with a bad actor (and perhaps remove, especially, problematic users from the community, but this power rests with the platforms themselves).

As such, participants felt the need to protect themselves from negative outcomes and possible bad actors. As Mowlabocus (2010b) suggests, profiles with face pictures are often one way to do this. Our participants also relied on existing shared points of identity, such as particular organizations or professions. In this way, LBSAs and other technologies that do not facilitate community boundary negotiation may be particularly helpful for helping marginalized people within a particular organization or context locate each other and reduce their own isolation. Where the goal is to connect people to an overall community, however, tools that allow for more explicit boundaries (e.g., Roy, 2003) may be more helpful. One could also imagine LBSA features that facilitate more boundary negotiation. Facebook's new Dating feature, for example, allows users to find potential dating "matches" within Facebook Groups or Events they are part of. LBSAs that signal other shared points of social connection, without the necessity of taking the risk of linking to an external profile, may also be helpful in this regard.

Conclusion

LBSAs, which facilitate interaction and social connection between physically proximate individuals would seem at first to be a valuable resource in reducing marginality for MSM by connecting otherwise isolated individuals with each other. In this article, we explored this notion from a socio-technical perspective through a qualitative study of MSM in Mumbai India who use LBSAs. Results suggest that the intersection of social practices with technical features meant that using LBSAs presented formidable risks and challenges, but also could serve as a valuable resource for connecting MSM to each other. As in other contexts, using LBSAs presented formidable risks and challenges such as information security and identification by others, but also could serve as a valuable resource for connecting MSM to each other. We also saw evidence of a paradox, whereby, one must be visible to connect with others, but that visibility itself risks identification by nearby others.

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