"Break the Ice": The Use of Technology to Initiate Communication in Public Spaces

Matjaž Kljun, Klen Čopič Pucihar

FAMNIT, University of Primorska, Koper, Slovenia
{matjaz.kljun, klen.copic}@famnit.upr.si

Abstract. The use of mobile technologies in public spaces often serves to disconnect users from their surroundings and alienate them from current social setting. However, digital interactions are often seen as the most appropriate method for communicating with strangers because they can be impersonal and free people from the fear of face-to-face rejection and social judgment that is based on first appearance and impression. This paper aims to explore if the perceived sense of security when using internet and mobile technologies for communication could also be established in a public setting of a cafeteria and benefit individuals when they are lonely in a public space. For this purpose, we built a technology probe that facilitates digital interactions (e.g. games, instant messaging, collaborative sketching, etc.) between collocated individuals in a public settings of a cafeteria by placing tablet computers on all tables. Our exploratory study shows that people could benefit from such a system as it is likely to alter their common behaviour — a result of a new possibility of initiating communication without the fear of jeopardizing their integrity.

Keywords: privacy · mobile technology · security · intimacy · first contact · rejection · digital interactions · technology · communicating with strangers

1 Introduction

The research on internet use and its effects on sociality has produced a significant amount of work ranging from studies that suggest internet's negative effects on one's social network to studies that emphasized benefits of using such technology to increase one's social capital. The latter have dominated in the last decade underlying benefits such as relative anonymity, perceived sense of security behind the screen, and absence of physical contact. However, the anonymity and lack of nonverbal clues can leave digital only relationships open to wrong interpretations and assumptions about the person on the other side [1]. Moreover, all the studies presented in next section have focused on distant communications which gained dominance with ever greater connectivity and availability of mobile devices. In this paper we aim to exploit the benefits of mobile technologies and internet communication to initiate collaborations within physical public space where people could end up being alone (e.g. cafeteria).

2 Related Work

Over the last three decades a large amount of literature on correlation between the use of internet and social interaction has been published. Earlier studies suggested that internet use at home has a strong negative impact on time spent with friends and family [1] and contributes to: smaller social networks, a decline in social engagement within one's household and increases the risk of depression and loneliness [2]. However, more recent studies have found that internet usage does not make users depressed or lonely but instead facilitates communication between geographically dispersed family members and friends [3], and supports communities through discussion and mobilization around local issues [4]. Internet can also foster new relationships based on shared values, beliefs and interests [3]. Moreover, if sufficient trust is established these relationships may reach out of the digital domain [3, 5, 6].

Several models of who is benefitting from online communication have been proposed. The "rich get richer" suggests that people who do well socially in the physical world benefit most in the digital domain [7, 8]. Alternatively, "social compensation" model predicts that those with difficulties in maintaining offline social networks might benefit from internet sociality [8]. Both models have been criticised for not taking user beliefs, motivations and other personality variables into account [9, 10]. Tufekci's study supports "seek and ye shall find" model, which assumes that for a variety of reasons, users either believe or not in online friendships and it is this belief, which affects acquiring new friends online [10].

Studies have consistently shown that users disclose large amounts of personal information online (e.g. on social networking sites (SNS)) [11, 12], which builds one's personality, establishes common ground and declares friendship connections [13, 14]. The anonymity of others who might access this information does not impact the amount of information revealed. It has been suggested that revealing information has the roots in the "stranger on a train" effect by making people feel comfortable sharing their lives without fearing disclosure [15, 16]. Besides, other factors have been proposed such as larger perceived benefits of revealed information than the perceived costs of possible privacy invasions, peer pressure, herding behaviour, trust in SNS and its members, and the service's own default privacy settings [11].

In addition to relative anonymity, internet also offers relative absence of nonverbal interaction cues, which encourages self-expression. Lack of visual cues has been also seen as liberating users from social judgment of physical appearance and attractiveness which is the norm offline [17, 18]. However, these features of internet communication tend to leave a lot unsaid, unspecified, and open to inference and interpretation. It is not surprising that "*one's own desires and goals regarding the people with whom one interacts have been found to make a dramatic difference in the assumptions and attributions one makes within that informational void*" [3 p586].

The above has triggered our research question whether these two worlds — (i) the anonymity and perceived sense of security when communicating using internet and mobile technologies, and (ii) the physical presence and nonverbal communication of physical world — could be coupled and benefit users when alone in public spaces. More specifically our aim is to find out whether mobile technologies can support the

outreach to other people in the same physical space (and assist local rather than distant communication) by offering a level of privacy and anonymity when attempting to make the first contact. The privacy can be achieved by keeping the interaction within the digital domain and visible only between the instigator and receiver whilst allowing users to bring communication to the real world through nonverbal communication cues and face-to-face interactions, whereas the perceived anonymity comes from the nature of digital interactions commonly perceived as less personal when compared to face-to-face interactions.

3 Method

For the purpose of this exploratory study we have used technology probes [19]. The study itself has been divided into two parts: (1) the use of probe in real life settings of a cafeteria which focused at understanding the needs and desires of users in a real-world setting and testing the technology, and (2) a focus group session aimed at understanding the needs and desires of users in a real-world setting and inspire users and researchers to think about alternative use cases and technologies.

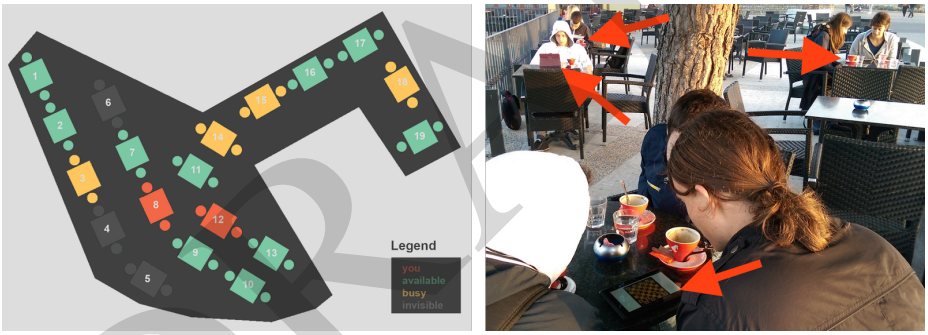

Fig. 1. (a) The map of the cafeteria presented to users on the tablet screen allowing table selection with a screen tap. Tables are colour coded to indicate availability (available, invisible or busy). (b) Users sitting in the cafeteria and using the probe tablets marked by the red arrows.

Participants: We have chosen to recruit students at our university for this exploratory study because students are regular visitors of cafeterias and are heavy users of mobile technologies. In return the students were offered a drink in the cafeteria. 18 participants (referred to as P1 to P18) from 4 different departments applied: mathematics, economics and finance, computer science and bioinformatics. Of these 5 were females and 13 males. The average age was 21. All have been using mobile technologies for 5 years or more. Participants have been randomly divided in two groups of 9 students to make focus groups more manageable.

1st PART. The probe are tablet computers placed on each of the cafeteria's tables. On a tablet screen, users see cafeteria map with tables layout as shown in Fig 1a. By selecting one of the available tables on the screen, users can invite visitor(s) sitting at

that table to a range of activities (chat, collaborative games and sketching or selfy picture sharing). By default, all tables are in "available" mode and visitors can select the "invisible" mode or simply ignore the requests. The first part lasted for about half an hour in a cafeteria where participants had been having a drink and using the probe. They have been sitting at the table either alone or in groups up to three (see Fig 1b).

2nd PART. The second part was carried out in a private room where a focus group session was conducted. The questions aimed at discussions about: (i) being alone in public spaces, (ii) technologies to assist people in engaging with strangers in public spaces, and (iii) other non-premeditated topics. The sessions have been filmed, videos transcribed and coded by two researchers. The main findings are presented in the following section.

4 Results and Discussion

In this section, we present results and observations from our study. We describe three main findings about: being alone, breaking the ice when making new friendships, and the probe built to support this process.

Being alone. All participants do not like the idea of being alone in a public place (e.g. cafeteria). Being alone has been associated with negative feelings, stigmatised and labelled as non-conformant with social norms. The majority of participants eat lunch or drink coffee in various cafeteria around town, however, when they are alone they actively avoid such settings and satisfy their basic needs such as food, coffee and drink in alternative non cafeteria settings (e.g. buy a sandwich or drink from the shop or vending machine and sit on the bench or walk around). However, there were situations when participants do find themselves in public places by themselves. For example, when they are waiting for somebody in a cafeteria or practicing individualistic sport (e.g. running). In such situation they are trying to find something to do (browsing, crossword, observing the surrounding, reading a book, studying) not to broadcast to the surrounding that they are bored, lonely and unaccompanied. If someone looks busy it is harder for others to label them as such. Having said all the above, it is important to note that all participants were students in the age of quickly expanding social circle and being highly socially active [12].

Icebreaking communication. Participants have all mentioned finding it stressful to initiate a conversation with a stranger. P5 remarked that *"when starting a conversation, I fear I'll make a fool of myself."* The majority have agreed that starting a conversation with a stranger is subjecting them to scrutiny; thus, they are trying to avoid it as observed in [18]. However, there are certain circumstances when this is not the case such as when asking for a little help or a small favour. For example, asking someone for time, directions, a chair in the cafeteria, bus timetables, or a lighter. Even if these conversation starters look similar they have a decisive property whether the conversation will last or die after a couple of sentences. If the conversation starter is

established on participants' common ground (e.g. both are smokers) the conversation may last longer. However, participants did stress out that the majority of such conversations finish after a couple of sentences are exchanged; which is when the stated conversation starting aim (getting help or a favour) is achieved.

Even higher fear of rejection [20] has been detected if a group of strangers is in question. P7 mentioned that joining a group of strangers, even if being invited, is risking of being ridiculed if saying something inappropriate. A constant theme coming up was not knowing strangers and their habits and thus not knowing what to talk about. One exception is team sports, which were mentioned by several participants. Joining a game played by strangers is not an issue since it does not expose one to communicate topics outside the scope of the game. As before, common ground facilitates collaboration and communication. Perhaps surprisingly, the participants would not join the same group if encountered in a different setting (e.g. cafeteria) even after playing a sport game with them.

Technology probe. Participants in particular liked the possibility of breaking the ice with the probe. It was seen as an initiator of new relationship between people in the same physical space in a similar fashion as this happens on SNS [3]. Making a contact through technology does not feel so personal and even rejection (either rejecting or being rejected) is easier to handle. Rejecting others face-to-face is considered *"insulting for person being rejected and uncomfortable for the person rejecting"* (P7). This sense of anonymity behind digital interactions boosts one's confidence and makes playing games over the probe with a stranger (or a group of strangers) easier than playing physical board game even if both (all) are present in the same physical space. Immediate physical presence requires conversation which is not required by using the probe. Answering to invitations and inviting through the probe is thus not perceived as problematic and does not present a threat to one's' integrity. Nevertheless, participants missed the chat feature in games to be able to communicate. Communicating over the probe provided less chance to a make fool of oneself as users have more time thinking about what to type. Participants also enjoyed the scalability of playing options: table to table collaboration (between single players or groups of players at each table), single table collaboration (people at the same table collaborate and compete together against other tables), and all tables collaborate for a common goal (e.g. solving a quiz for a shared prize).

Another raised issue has been privacy. No technology that would require either personal information (login) or one's own device would be acceptable as it would require user's intervention to make their table available. Moreover, participants also mentioned that the additional step of making a table available through their own device or login would possibly categorize them as socially weak individuals. While dedicated devices all being available all the time would not highlight them in front of others in the cafeteria. Moreover, they mentioned that such technology would even encourage them visit such public physical spaces alone.

5 CONCLUSION

This paper presents an exploratory study into how the use of mobile technologies and internet could help users to initiate communication in public spaces. The main finding of the study is that even in public spaces where people are physically present technology provides a sense of anonymity and security, and can help people to break the ice in forming new friendships. However, technology should be provided and not require any user intervention for system setup. For the future work we plan to develop the probe into a fully functional product and deploy it into a cafeteria over a longer period of time to conduct a longitudinal study in real-life settings and conduct a survey and interviews with the willing participants.

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