
The Collision of Online and Offline Expectations in Computer-Mediated Communication

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Abstract

Thanks to mobile phones, computer-mediated communication allows us to get in touch with people anywhere, anytime. We are no longer limited to being strictly online or offline. Hence, users can easily get caught between the expectations of people who are co-located in the offline/physical world, and the expectations of others who try to contact them online. However, existing systems today offer little help to effectively manage and balance these potentially colliding expectations from both worlds. We argue that one fruitful strategy to tackle this challenge is to share contextual cues not only with those trying to connect with us via the online world, as proposed in previous work, but also with people who are co-located with us in the offline world.

Author Keywords

Notifications, Computer-Mediated Communication, Availability, Expectations

ACM Classification Keywords

H.5.3 [Group and Organization Interfaces]: Asynchronous Communication.

Background and Motivation

Humans are creatures of the physical, offline world. To be able to interact and immerse ourselves into the online

world, we require interactive computing devices. Without them, the online world is invisible to us.

We increasingly visit this online world and engage in different forms of computer-mediated communication. A 2013 report by eMarketer¹ found that the average American spends 23 hours/week emailing, texting, using social media and other forms of online communication.

Computer-mediated communication often goes along with certain expectations towards the responsiveness of the receiver [3, 6]. People are expected to be always available online [2, 5], and very frequently meet such an expectation: previous work [1, 7, 8] has shown that, on average, mobile phone users check new notifications within a few minutes after their arrival. Most communication services employ notifications – visual, auditory, or tactile alerts [4] – to enable us to meet these expectations. The pervasiveness of notifications has contributed to blurring the borders between being strictly online or offline.

However, the way that computer-mediated communication is managed today is agnostic of the receiver's context in the offline, physical world. Messages may request our attention in situations where people who are co-located with us in the offline world also expect our full attention. Furthermore, there are few cues – if any – about the importance of our online requests and notifications to those who are co-located with us in the offline world. In these situations, the expectations from the online and the offline worlds collide.

¹<http://www.emarketer.com/Article/Social-Usage-Involves-More-Platforms-More-Often/1010019>

Collision of Expectations

In previous work, we conducted an *in-situ* study of mobile phone notifications [6]. For 7 days, we logged the mobile phone activity related to communication, such as number of messages and emails received, from 15 participants. In addition, each day, the participants filled out an online diary form, where they reflected – amongst other things – on interruptions they had by their phone. Our participants' feedback contains several examples of collisions of expectations between the offline and online spaces which we illustrate in the following.

Online Request Conflicts with Offline Activity

During the study, our participants received a median number of 65 notifications per day, with 84.9% of them originating from computer-mediated communication services. Given this high volume of notifications, receivers were already busy, many times when an online contact opens up a chat:

P04: *"I [...] was playing with my child in the sun. While playing I received some messages via WhatsApp"*.

The issue arises from the fact that people are subject to expectations towards their online responsiveness: in the recruitment survey of our study [6], more than half of the participants stated that others expect them to respond to messages within a few minutes. Indeed, our results show that people attend to new notifications within minutes (e.g., within $Mdn = 3.5$ minutes for notifications from messenger applications), which is in line with other previous studies [1, 8]. Consequently, notifications may trigger people to interrupt their offline-world activity to respond to these expectations. Instances that our participants described include:

P06: *"I was at the bar with friends, and sometimes WhatsApp notifications interrupted our conversations."*

P08: *"WhatsApp distracted [...] from enjoying the opera, because I got a message and had an urge to check it."*

Offline Activities Delay Online Activity

Despite these expectations regarding responsiveness to online requests, we also have to attend expectations and needs in the offline world. Hence, people cannot always attend such requests immediately:

P14: *"I was working in the morning with my boss and I saw the notification led, and I was expecting a message from my girlfriend."*

P06: *"I silence my phone in class, and only see mails when I finish, so I was delayed to reply to an email I would have replied earlier otherwise."*

Sharing Social Cues

The feedback provided by our participants shows how computer-mediated communication may put people into situations where expectations collide, leaving the receiver with the challenge to balance expectations from people both in the offline and online worlds. Today we have limited ability to share our social context in the offline world with those in the online world, and our social context in the online world with those in the offline world.

As a consequence, people have to interrupt offline activities (working, being out with friends, opera) to attend to people online. At other times, offline activities (watching a movie, being with friends) make it impossible to attend to the online world as fast as people wished, which can cause missed opportunities and important information or violated expectations.

Sharing Social Cues with the Online World

One strategy to manage expectations of people who contact a user via online media lies in sharing information about our context and particularly availability to engage in communication. When approaching other people in the offline world, there are typically clear social signals, such as being focussed on the mobile phone or wearing headphones, that indicate to others that the person is "unavailable". If a message sender was aware that a message receiver is currently in a social situation, where attending to messages is considered impolite, the sender would have the opportunity to adjust her/his expectations towards the responsiveness of the receiver.

As a solution to this, researchers – including ourselves – have proposed the use of machine-learning algorithms to detect and predict the user's availability to online interruptions. For example, we demonstrated the feasibility of predicting a mobile phone user's attentiveness, that is, whether a message would be attended within a few minutes or not [7]. We envision a system where each phone continuously predicts the attentiveness of its user and shares this prediction with the user's contacts when appropriate and enabled by the user.

Sharing Cues Social with the Offline World

Another strategy that has received less attention is to support mobile phone users when they desire to attend online communication while being co-located with others. The act of snubbing someone in a social setting by looking at your phone instead of paying attention, sometimes referred to as *phubbing*, has a clear negative connotation. If co-located people received cues about the importance of an online communication request, they might be more understanding when attending it.

There are some cues, such as the modality of the communication attempt (e.g. call vs. message), which allow for some judgment of the importance. Also, some messengers, such as MSN messenger, allowed to 'nudge' others, i.e. causing the screen to vibrate. This could be perceived by co-located people as an extra strong request to the receiver's attention.

Conclusions

There are strongly voiced opinions (see e.g. Turkle's *Alone Together: Why We Expect More from Technology and Less from Each Other* [9]) that social contacts in the offline have priority. Engaging with the online world while being co-located with others is of lower importance and represents a less positive contribution to our lives.

However, by arguing this way we fail to acknowledge how important and common-place computer-mediated communication has become. We fail to acknowledge that existing, deep, and meaningful relationships are kept alive via the online world. We also fail to acknowledge the expectations regarding to the responsiveness to computer-mediated communication that we often experience or even subconsciously generate ourselves. And we fail to acknowledge that we are already living between the worlds, online and offline.

We argue that we should not only create support to keep offline communication uninterrupted. There might also be an opportunity to be looking into how we can communicate the (non)importance of a computer-mediated communication attempt to people who are collocated.

Much like we created spaces and rules for motorized vehicles, who were once sharing the same space with pedestrians, carriages, and vehicles, and who's interaction

once took place without any explicit rule, it might be about time to set out and create spaces and rules for computer-mediated communication, so it can peacefully co-exist with co-located social events.

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