

# Forget-me-not: History-less Mobile Messaging

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## ABSTRACT

Text messaging has long been a popular activity, and today smartphone apps enable users to choose from a plethora of mobile messaging applications. While we know a lot about SMS practices, we know less about practices of messaging applications. In this paper, we take a first step to explore one ubiquitous aspect of mobile messaging – messaging history. We designed, built, and trialled a mobile messaging application without history—named *forget-me-not*. The two-week trial showed that history-less messaging no longer supports chit-chat as seen in e.g. WhatsApp, but is still considered conversational and more ‘engaging’. Participants expressed being lenient and relaxed about what they wrote. Removing the history allowed us to gain insights into what uses history has in other mobile messaging applications, such as planning events, allowing for distractions, and maintaining multiple conversation threads.

## Author Keywords

Instant Messaging; Mobile Phones; Communication; Mobile Instant Messaging;

## ACM Classification Keywords

H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

## INTRODUCTION

Mobile phones have been used to send text messages between people since the introduction of SMS. Over time, technical development has changed the capabilities of the phones used to send and receive these text messages. The capacity to send multiple SMS-messages as one resulted in longer messages. More memory in the phone resulted in the ability to save more messages. MMS meant people could start sending more than just text, but also images and other media. However, with apps came messaging capabilities

not restricted by phone operators. Apps such as WhatsApp, Facebook Messenger, and Line (to name a few) are all popular applications used by millions of people.

Studies of messaging behaviour show how, as the capabilities of these messaging media have developed over time, so have the use and meaning of messaging. In an early study of teenagers’ use of SMS, phones’ limited memory capacity was found to have a significant impact on the practice of messaging [13]. More recent studies of the use of WhatsApp highlight differences among seemingly similar services, e.g. communication through WhatsApp and Facebook Messenger is different from communication through SMS and email [9, 3].

As subtle differences in the communication technology can have significant influence on the meaning and practice of communication, we are interested in how different aspects of messaging apps affect their use. In the work we present here, we explored the role of messaging history in mobile text messaging by developing and deploying a mobile messaging app — *forget-me-not* — that is void of history. We discuss the design and implementation of the system, and a two-week trial with 10 participants who used it in their everyday lives to communicate with friends who also had the app.

## MOBILE TEXT MESSAGING

As an asynchronous communication platform, SMS turned out to be more reliable than making mobile phone calls [5]. And, as its popularity grew (especially among young people [6]) researchers turned their attention to the practice of text messaging (e.g. [5, 13, 6, 7, 1]).

Taylor & Harper looked at teenagers’ use of SMS and found evidence of practices of gift-giving [13]. Their findings however are not just tied to the medium of SMS, but to the technical capabilities of the phones of the time. Because of the limited memory capabilities of phones at the beginning of the millennium, to save and keep a text message (either sent or received), one used a scarce resource: memory. This scarcity gave the saved messages value. To save a message when the phone’s storage limit was reached, one had to choose another message to discard—thus valuing the one saved higher than the one discarded. However, such limitations of mobile phones are long gone. Taylor and Harper remark that while this technology-imposed limit could be solved by increasing the

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memory capacity, it might not be a problem that should be fixed in this way. Their proposed solutions are yet to be seen in the design of mobile messaging applications.

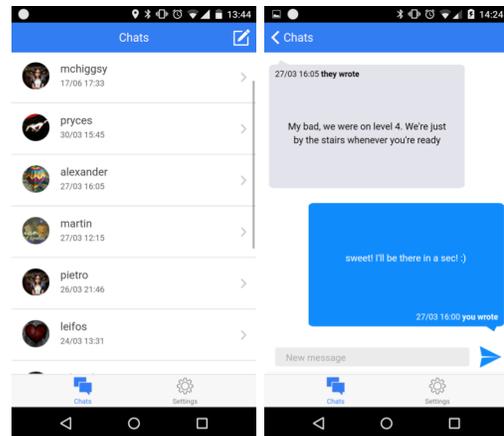
Although SMS and Instant Messaging (IM) both allow people to communicate by sending text messages back and forth, Grinter et al. investigated the differences in their use by teenagers [8]. At the time of their study, mobile devices were not used to a large degree for IM purposes, and thus the use of IM was from a fixed computer in the home using a dial-up or broadband Internet connection. They found that the fixed vs. mobile nature, and differences in app features (such as showing when someone is online), played a key role in the differences in use that shaped social practice. For example, SMS was good for commenting and asking questions within a known context, whereas IM provided more opportunity to establish context.

Since these studies, SMS is no longer the only means for sending text messages when on the go, but a plethora of mobile messaging applications is in use today. Researchers have therefore started to look at the use of these types of messaging applications, and how they differ from SMS practices.

Church and Oliveira set out to investigate how messaging practices differ between WhatsApp and traditional SMS (referring the class of apps that WhatsApp belong to as MIM – Mobile Instant Messengers) [3]. Their study found that WhatsApp communication was more conversational, used for a closer circle of friends, and commonly used for group communication. Their participants highlighted that WhatsApp was more immediate compared to SMS.

O’Hara et al. investigated the practice of text messaging using these types of messaging applications (referring to them as OTT (Over The Top) applications), through a case study of WhatsApp [9]. They highlight even more strongly that WhatsApp communication is more conversational in nature, and how these conversations are played out across space and time between close friends. Both these studies point to how the possibilities presented in WhatsApp allow for continuous on-going conversations without a distinct beginning or end, but rather as part of how relationships play out between people as an ongoing narrative. O’Hara et al. contrast this with how people use SMS and other text-based communications, where a message may invite a response, but a conversation held through SMS typically has a purpose, beginning, and an end (or transition to another medium)—as opposed to the ongoing nature of conversations held over WhatsApp.

While these studies show that there are differences in the practices around different mobile messaging technologies, it is difficult to elicit what aspects of the technologies give rise to particular differences in the practices that unfold. We decided to explore this by focussing on one aspect that is virtually ubiquitous in mobile text messaging—namely messaging history—by designing, building, and trialling an



**Figure 1. Screenshots from the Android version of forget-me-not showing: (left) a list of recently had conversations, and (right) the view of a conversation.**

app without history. Such an app challenges the current norm in mobile text messaging, and the aim is to explore what happens when we break this norm.

Forget-me-not is similar to Snapchat [2]—a photo sharing service where photos are only available for a brief moment of time. With forget-me-not however we focus on a strictly text based communication technology.

#### **FORGET-ME-NOT**

The mobile app *forget-me-not* was designed with the core idea of removing messaging history from text messaging, so as to explore what such a service would be like in use when compared to existing systems. The final design of the app came out of a design process involving several paper prototypes, wireframes, and two fully functioning apps.

The first design questions that had to be resolved were around what it meant to not have a messaging history in a messaging application. When does a past message disappear? Who is in control? Where does it disappear from (sender and/or recipient)? Through a series of brainstorming sessions, the team decided to have two streams of messages for each conversation: one for incoming messages, and one for outgoing. This made the rest fall into place. One incoming message and one outgoing would be displayed on the screen. When a new message is received, the previously received message disappears. When a new message is sent, the previously sent message disappears as the user hits send. The app would not support group chat initially, and thus the two streams represent the two parties of the conversation.

The result is a simple messaging application with a list of conversations ordered by time of interaction (see left of Figure 1). Selecting one from the list opens the conversation view that displays the last received message, and last sent message, and an input field (right of Figure 1). The user gets a notification on his or her phone when receiving a message.

Since only the last sent and received messages are displayed to the user, sending an empty message allows a user to erase a message. This let users 'take back' a sent message, or to erase a previous message before they send a newly corrected one.

The app was implemented using Cordova [4] and the Ionic Framework [10], and was built for iOS and Android. It was deployed both on the Apple App Store and the Google Play store. This made it easy for the participants to install the app, whom could ask friends outside of the trial to install the app as well (which some did).

### **TRIAL**

We ran a trial with 10 participants for 2 weeks. The participants were recruited from two groups with existing social ties: one group of 4 male participants who regularly played basketball together (aged 20-24), and one group of three males and three females (aged 19-21) of whom four shared a flat and two were in a romantic relationship (and knew the other four). We wanted to have two smaller groups rather than one big group in order to capture a broader set of issues that may not arise in a single group. There were 6 iOS users and 4 Android users. They were each given £10 for their participation.

We conducted a semi-structured interview with each participant at the end of the two weeks. The interviews focused on participants' current messaging practices, how they had experienced communicating through forget-me-not, what they liked and did not like, and their perceptions of the usefulness of forget-me-not. Since we did not expect the participants to replace existing messaging services with forget-me-not, we were interested in hearing about how they saw forget-me-not in relation to other messaging services they used. The interviews were transcribed and analysed following a general inductive approach [14].

### **Findings**

Over the two weeks of the trial our ten participants sent a total of 323 messages (the participants who sent the most and least messages sent 67 and 13 messages respectively).

#### *Messaging through forget-me-not required effort*

The participants were regular users of SMS, WhatsApp, Facebook Messenger, Skype, and WeChat. The reason for using any one of these often seemed to be that of habit:

*"I use far too many different apps for different people... There will be some people that I always message on WhatsApp and someone who I will always message on iMessage, but it's a bit diverse"* (P6)

Interestingly however the lack of a messaging history did have a dramatic effect on how they perceived conversations conducted through it. Whereas WhatsApp allow for shorter burst of messages and "chit-chat" [9], this seemed to be dissuaded in forget-me-not:

*"I definitely thought more about what I wanted to ask and try to make it a more coherent message, like, longer and better"* (P3)

They expressed that they had to put more effort into each message and thus avoided 'random chit-chat'. Only being able to send a single message at a time was perceived as a "more conscious process than normal" (P3).

#### *Messaging through forget-me-not was relaxed*

While messaging through forget-me-not required effort, they could still find those conversations relaxing. Because of the ephemerality of the message, one participant expressed that it did promote "more spontaneous communication" (P10), and they could be more at ease with what they wrote:

*"with forget-me-not you feel a lot more lenient about what you are going to say, so you feel that you could say whatever and not really care"* (P5)

Perhaps because it would not be possible to take a screenshot of a full conversation, but only fragments of a conversation, the issues found in [9] about not using it for early romantic relationships appear to be void. Without the history, one feels only accountable for the last message, not for the entailing conversation.

While it made communicating through forget-me-not a more "conscious process" (P3), it still maintained the ability for "spontaneous communication" (P10). But such spontaneous communication did not allow for distractions, or as one participant put it:

*"It's a bit more engaging, like you're chatting in person."* (P1)

And it required you be more attentive to the conversation as as you could no longer rely on the messaging history:

*"You have to have a good memory to remember the whole course of it. It's a lot more like a real conversation."* (P7)

Messaging history is useful. They talked about how in other messaging apps, they would simply *scroll back*. This highlights how the messaging history is used in other messaging applications. For real time conversations over forget-me-not, not being able to scroll back is not an issue, but when messages are far between it does present a challenge as opposed to other messaging applications:

*"when you have a real time conversation... it's alright because you, you remember what you've said, so, it doesn't matter. ... I had a chat with this guy two weeks ago and now I can see the last message I said but I don't really remember what we were chatting about... and in WhatsApp for example, you can scroll up and see."* (P2)

The participants used forget-me-not along with other messaging apps. These were used with people they were also using forget-me-not with. The motivations for doing so were in instances when messaging history was useful, e.g.

when arranging a meeting that included location and time, but some participants also explicitly said that history was not important to them. If something had to be remembered, they claimed they would take a note of it elsewhere.

#### *A lack of history is also useful*

The participants were positive about what it meant not having a messaging history: the ability to erase a previously sent message before the recipient sees it. It was used both to delete a message when changing one's mind, but also to fix a spelling or grammatical error. This again made participants more relaxed about what they wrote to each other in forget-me-not:

*“if you write something stupid, you can just send another message immediately and. . . delete everything”* (P7)

This feature was given as a reason for why this app should be the go-to app for “drunk-texting” (P7). One participant mentioned another benefit:

*“[to share] bank accounts [details], private messages, stuff like that... I would use it. . . [it] keeps the privacy of every message you send”* (P2)

Here P2 expresses that the history-less nature was not only a novel aspect of the application, but perceived as a useful feature adding a feeling of privacy and protection of information. Once the message with the private information has been replaced with a subsequent message, someone going through his or her phone cannot read it.

The participants' comments about having to remember what you are talking about, and how the conversations require more effort, indicate the ways in which traditional messaging history is useful—most particularly when making plans and deciding on time and location. Despite this, when asked if in-app history was important, most participants expressed that it was not.

## **DISCUSSION**

The participants in this study perceived the absence of history as an opportunity to be more relaxed about what to say. At the same time, communicating through forget-me-not compared to other messaging applications required more effort. Where O'Hara et al. [9] found WhatsApp to be used in a continuous manner, and encouraging chit-chat, forget-me-not did not afford random chit-chat as easily but did leave participants relaxed about what they wrote. Using Grinter et al.'s terms [8], forget-me-not lent itself to a usage style akin to discrete-intensive, rather than the continuous-sporadic style seen in reports of WhatsApp use.

That the participants were more relaxed about what they wrote seems to stem from not being on record. It is not trivial for a user of forget-me-not to discuss or analyse a conversation with a third party, as seen in the use of WhatsApp [9]. A message written in forget-me-not only lasts until the next message and so the messages are ephemeral like utterances in spoken conversations. The ability to scroll back in other text messaging applications

allows one to deal with distractions, and spawn new conversational threads. The participants expressed that these were problematic in forget-me-not. Perhaps using forget-me-not for only two weeks is not enough time to develop coping mechanisms that may develop over time. Perhaps not having to pay attention to the current thread in traditional text messaging dulls one's ability to handle multiple threads without messaging history.

There appears to be a tension between effort in writing and the ability to be relaxed about what you write. While ordinary mobile text messaging allows for chit-chat and continuous conversations, these opportunities appear lost when removing messaging history. The participants in our study compared the conversations using forget-me-not to “real conversations”. This echoes the result of Bayer et al.'s study of Snapchat [2], where their interviewees compared Snapchat to face-to-face interactions. Perhaps it is in knowing that messages are temporary and not being recorded that makes the conversations more engaging in the moment. More broadly it is worthwhile to continue exploring ephemerality in design of communication technology as it appears to provide a mechanism for bringing the conversation closer to the forefront of activity.

In a world where technology affords almost unlimited memory (at least in the context of text messages), forget-me-not can be seen as what Pierce and Paulos refer to as a *counterfunctional thing* [11]. A history-less messaging application is not something that is enabled by technology, but has been functionally restricted by design. While the phones used by the teenagers studied by Taylor and Harper [13] had limited memory, they did so because of the state of technology at the time. Over time such restrictions disappeared and the practice of messaging changed. With our counterfunctional thing, we have restricted the technology of messaging to no longer have the capability to remember. This method has allowed us to study what happens when contemporary users are introduced to such a restriction, and to learn about the role of messaging history in other contemporary applications.

## **CONCLUSION**

We have explored what happens to the practice of mobile messaging if we remove the ability to keep a history of previously sent and received messages. We found that while writing messages requires more effort, it is possible to be relaxed about what one writes. It promotes a discrete-intensive use, but still supports spontaneous communication. We found that what is the current norm in mobile text messaging—messaging history—is not necessarily needed for effective and engaging conversations. History is used for record keeping, but also for managing distractions and multiple threads.

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