
Look What I Found! Augmenting Phone Calls with Memories of the Past

Élton Gouveia

Francisco Azevedo

Luís Ferreira

Paulo Caldeira

Vítor Almeida

University of Madeira

{eeggouveia, franciscoazevedo91,
miguel90, paulocaldeira17,
almeida.vna}@gmail.com

Rúben Gouveia

Evangelos Karapanos

Madeira Interactive Technologies Institute,
Funchal, Portugal

{rubahfgouveia, e.karapanos}@gmail.com

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Abstract

Photos have an enormous capacity in cueing memories of our past and supporting collective reminiscing. Yet, despite the considerable increase in our ability to efficiently capture photos, our digital photo collections remain to a large extent invisible to our everyday interactions with the physical world. We present the design of “Look what I found!”, a mobile application that aims at supporting collective reminiscing through making photos present in our daily phone calls. We then report the field trial of “Look what I found!” that discovered unexpected and often inventive ways in which users appropriate the application in their daily lives.

Author Keywords

Photos; Sharing; Experiences; Nostalgia; Serendipity;

ACM Classification Keywords

H5.2. [Information Interfaces and Presentation]: User Interfaces.

Introduction

Photos have an enormous capacity in cueing memories of our past [1] which in turn are instrumental in maintaining our personal identity, in mediating our relationships with others, as well in regulating our



Figure 1 – When a call is established between two contacts, “Look what I found!” selects a random photo out of their shared collection and displays this to both contacts.

moods [2]. When viewed in groups, photos support collective reminiscing, or as Crete-Nishihata et al. [5] put it, they “start family conversations, engender feelings of togetherness, and provide a legacy for family members”.

Yet, despite the considerable increase in our ability to efficiently capture photos, or even produce continuous visual life logs of our daily experiences [8], our digital photo collections remain to a large extent invisible to our everyday interactions with the physical world [2, 12, 13]. Respectively, substantial efforts have been devoted to making these digital memorabilia present in the physical world, notably through material mementos [e.g., 12].

In this paper we present the design and field trial of “Look What I found!”, a mobile application developed on Google Android OS that aims at supporting collective reminiscing through making photos present in our daily phone calls. This way, “Look What I found!” aims at inducing a feeling of togetherness and intimacy that has been shown to have positive long-term of the quality of social relationships as well as the psychological well being of the individuals [7].

Look what I found!

The use of photos as a way to identify people during incoming calls on mobile phones has evolved through a number of stages over the past few years.

In-call photos were initially conceived as an additional cue for identifying the identity of the caller. Photos were static over time, they were selected by the callee, and the underlying principle was the efficiency in identifying the identity of the caller.

With the integration of Social Media, such as Facebook, on mobile devices and the increasing connectivity of mobile devices, the paradigm has shifted. In-call photos can now be defined by the caller, they can be changed over time and the underlying principle is self-expression [10].

With “Look What I Found!”, we propose a third paradigm in the use of in-call photos, motivated by the human need of collective reminiscing. According to this paradigm, in-call photos reflect not the identity of the caller, but our relationship to her through photographs of our shared past. Photos are thus *dynamic*; each new incoming call will bring a different photo. They are also *random*; neither the caller nor the callee knows a-priori which photo will be displayed. Last, they are *symmetric*; both the caller and the callee see the same photo during the call.

Interacting with “Look what I found!” happens in three stages. First, the system allows users to select photos and associate them to contacts. Second, when a call is being established between any two individuals, the system randomly selects one photo from either the caller’s or the callee’s photo collection. Third, the user may revisit photos that have been displayed during her past phone calls with a contact. While the user does not have access to the photos that a contact has associated with her, once the photo is displayed during a phone call, the photo becomes a property of both and both users may revisit the photo along with the date and time of the phone call in which the photo was last displayed.

Two underlying design principles of “Look What I found!” are *randomness* and *ambiguity*.

Randomness, when the system selects which photo to display, is thought to enhance the chances of experiencing collective serendipity. We wish this to happen through a dialog between the individuals rather than as an internal, individualistic process. Thus both individuals should be exposed to the same amount of information.

Ambiguity is induced when selecting from which photo collection, the one of the caller or the callee, to select the photo to be displayed. The system randomly selects between the caller's and the callee's photo collections and does not let the users know where the photo came from. Assuming relatively large photo collections that were created several months in the past, we expect this ambiguity as to who selected the photo, to force individuals into attempting to recall their motives in selecting this photo, and thus reflecting upon the personal significance of the photo.

The motivation for the design of "Look What I found!" comes from the lack of technological options when it comes to supporting close-distance relationships through rich communication media [3]. In their review of communication technologies for couples, Branham et al. [3] found that 85% of them were motivated by supporting couples at a distance, while 78% were motivated by supporting abstracted presence. "Look what I found!" aims at providing rich visual cues to support collective reminiscing and induce feelings of togetherness and intimacy.

Target audience

In a survey with 52 people, aged 17-51, we asked participants to select the single group of social ties (significant other, friends, parents) they would most

desire using "Look what I found!" with. Thirty-one (60%) of survey respondents reported that the primary group was their significant other, followed by parents (11 out of 52, 21%) and friends (9 out of 52, 17%). One respondent left this option blank. This result is in agreement with our expectations and similar to that of Kirk et al [4] who argued that "conversations via video were almost exclusively with either family or partners... video was deemed a relatively intimate act and one that would not necessarily be extended to a wide set of friends". While "Look what I found!" does not restrict usage to particular user groups, we relied on this finding to select the participant sample for the field trial.

Field trial of "Look what I found!"

To understand the potential value and emerging uses of "Look What I Found!", we deployed it with 8 couples (mean age = 21 years old). Each couple was asked to use the application for a limited period of two days. The application was installed on their own mobile phones – in a few cases, one of the partners did not own an Android phone in which case we provided them with one and helped them to transfer all contacts and mobile content.

During these two days, participants were asked to log their thoughts and feelings following the completion of a phone call with their partner, using a pen-and-paper diary. For each phone call, we asked them to describe the photo and its personal significance to them, the nature and content of their conversation, whether and how the system influenced their conversation, and their feelings (if any) induced by seeing and talking over this photo.



Figure 2. A playful and persuasive invitation



Figure 3. Co-ordinating the location of a meeting



Figure 4. "You're late!"

At the end of the testing period, an interview took place with both partners present. All exchanges photos and associated diary logs were presented to them in forward chronological order and we asked them to describe the context in which the phone call was made, the nature and significance of the photo, the impact the photo had on their conversation and their emotions, and any unexpected events during, before or after the phone call.

Study results

In total, 38 photos were displayed in the course of the two-day field trial. The ways in which users employed the application proved surprising and contrary to our initial expectations. Rather than using photos to augment memories of the past, couples most frequently used it to communicate their ongoing experiences. As one of the users mentioned:

"[C5 Caller] ... we were making calls all the time, with pictures of the places we were, or things that we wanted to show to each other. It was crazy, at least I wanted to take pictures of everything and show him!"

Users often employed "Look What I found!" as a playful and persuasive invitation to an upcoming event (see figure 2):

"[C2 Caller] I took a photo of Funchal's city Christmas light decorations, and when I phoned her I asked her to go out with me to see the rest of them.", "[C2 Callee] It was actually an interesting way to invite me, I didn't know the lights were already...", "[C8 Caller] ... My girlfriend was studying in another room and I phoned her with a picture of a cup of coffee and invited her to come with me."

In other cases, the system was employed as a coordination tool, for instance through communicating the location of a meeting (see figure 3):

"[C6 Caller] I phoned her and took a picture of the shopping center where I was, so she knew where we were supposed to meet."

Interestingly, some users employed the system to communicate their emotions and desires in an ambiguous way (see figure 4):

"[C3 Caller] He was supposed to pick me up at 8PM but was late as usual. I was going to call him to ask him if he could hurry up... I thought it would be a good idea to take a picture of my wall clock to show him he was late."

While participants overall commented that the application did not really affect their conversation during the call, some participants highlighted the positive effect it had in their relationship in-between these calls. As this participant mentioned:

"[C1 Callee] ... The only thing that I can recall being different was that I was always thinking if he would surprise me with any particular photo on the next call..."

Interestingly, some of the couples that use SMS more frequently than phone calls, adapted the use of "Look what I found!" to their needs:

"[C2 Caller] I felt in the mood to have our usual romantic text messaging, and so I called him with a picture we have of an underwater kiss. Right after he

saw the photo, I hanged up the call... It was a quick way to show him a bit of care and love in more than just words...", "[C2 Callee] We spend much time exchanging romantic text messages, so this was a different and funny way to do it."

Overall, the way participants used "Look what I found!" to resembled a form of Multimedia Messaging Service (MMS). Participants preferred using it over MMS partly due to providing faster acknowledgement that the callee received the photo:

"[C2 Caller] It's quicker, it's easier, and I get immediate feedback as to whether he saw the photo or not, instead of not knowing if the MMS was delivered."

Conclusion

Overall, we found that users employed "Look what I found!" in unexpected, and inventive ways, supporting and expanding prior work on photo-sharing [14]. Even when not supporting in-the-moment photo sharing, our users adapted their use behavior to achieve their goal. Participants reported a preference in using "Look what I found!" over MMS, due to its simple and immediate acknowledgement of a photo being received by the callee. Interestingly, text messaging was also put on hold for most of couples as its utility was to a large extend complemented by "Look what I found!".

Obviously, our testing period and sample size are restricted and further testing is required to guarantee that this was not merely an early sign of interest in new technology that would fades away over time [11]. The diversity of uses that were given to the application surprised us, and this deserves further exploration.

Given the unexpectedness of the results we cannot conclude on the potential of in-call photos to support collective reminiscing. Our future work will explore strategies for motivating end-users to put a-priori effort in shaping their contact-specific photo collections. Some promising paths may involve the use of gamification principles [12]. Others might rely on social translucence in an attempt to bring mutual accountability on individuals' investment in their relationship. However, similarly to [5], we found photos to be an effective cue in initiating phone conversations, and, thus, we argue that photos may have many other benefits during phone-calls, other than the ones we initially expected.

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