Exploring Ephemerality in Social Media with the Facebook Timebomb

Vanessa Hernandez
Department of Computational and Mathematical Sciences
University of Houston-Downtown
hernandezv29@gator.uhd.edu

ABSTRACT
People are sharing large amounts of information on social networking sites, with little consideration that their posts remain online indefinitely. We are investigating whether reduced effort in removing posts will add privacy protection. We have conducted an interview study examining user’s perceptions on post permanence. The results informed the creation of a Facebook prototype application for posting status updates or photos, which allows users to pre-determine when posts will be deleted. A controlled user study examining the prototype, users' sharing habits, and perceptions toward temporary online information is underway. Results will guide the design of privacy-preserving features for social media sites.

Keywords
Facebook, privacy, temporality

1. INTRODUCTION
For many people, Facebook profiles are an online extension of themselves. This could be one reason people are inclined to post status updates and photos with little regard that these updates will remain online indefinitely. There have been numerous examples of blunders made on social media sites (SMS) exposed by news media. For example, French Lady Valerie Trierweiler will now "count to ten before tweeting" after she snubbed her rival (who happens to be her husband’s former wife) and the tweet went viral [1]. More recently, 23-year-old Michael Morganella of the Swedish Olympic team expressed his frustration of a loss to South Korea in a discriminatory tweet, which resulted in his expulsion from the team and the remainder of the Olympic games [2].

Despite these mishaps, few people seem to think of the long term consequences of their behaviors on social media sites. There is even a website dedicated to preserving “…errors, embarrassments, misclicks—the stuff that, for whatever reason, a politician doesn't want you to read on Twitter.” The site digs into the accounts of every politician with a Twitter account and reposts any posts that have been deleted by that person. The website also sources from where the tweet was made as well as the length of time a tweet was online before its deletion. For the rest of us, however, we may be saved from such blunders, embarrassment, and regrets if our information was not permanent.

1.1 Related Works
The issues surrounding the permanence of online information center around privacy. We offer Altman’s definition of privacy as “an interpersonal boundary regulation process used by people to regulate their interactions with others,” to serve as a basis for our project [3]. Palen and Dourish build upon Altman’s definition and discuss challenges faced with online privacy noting, “Problems emerge when participation in the networked world is not deliberate, or when the bonds of identity definition are not within one’s total control” [4]. In particular, they note that one of the new boundary challenges is the temporal boundary, where it is difficult to gauge future implications based on daily technological interactions. Yet, our present interactions are potentially viewable by many others far into the future, in contexts we find hard to anticipate. One implication researchers such as Cranor et al. have studied and concluded outcomes such as regret are common among users of SMS [5]. Research has also shown that the difficulty in managing privacy has become a concern with users of SMS sites. Johnson, Egelman & Bellovin state, “Participants currently use a variety of ad hoc approaches that are unlikely to address their concerns” [6]. They note that deleting information is one way of coping, yet most behaviors they discuss were performed immediately, such as untagging or deleting unflattering photos. The behavior we are most interested in however is temporality-how users control the lifetime of their information on social media sites, and deal with the potential permanence of such information.

1.2 Research Questions
Prior research has examined the misjudgment of posts, the negative impacts associated with posting statuses as well as users’ thoughts and perceptions pertaining to privacy on social networking sites. We chose to examine users behavior with permanence and temporality. We aim to answer the following questions in this paper:

- What are the privacy implications of the permanence of posts?
- How do users manage the longevity of their posts?
- What is the impact of allowing posts to be temporary?

We first performed an interview study to examine users’ perceptions of the permanence of their information and their current behaviors. We then introduce a prototype with the ability to control the lifetime of their information. Finally, we discuss a user study we will conduct with this prototype to examine whether making deleting easier will impact sharing behavior.
2. METHODOLOGY

In this section we describe our procedures and present a brief summary of the types of questions asked during our initial user study. We designed our questions to gain an in-depth understanding of how users currently use SMS, their thoughts on privacy, frequency of visiting other’s webpages as well as their deletion frequency.

2.1 Interview Study

We conducted semi-structured interviews in June 2012, audio-recorded either in person or via Skype appointments. We selected participants through a convenience sample of the acquaintances of four different interviewers, with an aim to diversify in ages, ethnicities, and backgrounds. We were successfully able to recruit a range of participants from within the United States, including racial, geographical and occupational variety. Each participant was required to meet two prerequisites: each must be an active user on Facebook or Twitter, and each must be over the age of 18. We requested all recruited participants to sign or email consent to participate in the interview study.

We began each interview with questions about the user’s general usage, such as the types of information they choose to share, their thoughts while they created a post/tweet and their interaction with various social groups. We wanted to see if people made use of current privacy measures as supplied by both Facebook and Twitter. This was followed by an assortment of questions that would collect information about users’ perceptions of post/tweet-viewing frequency, post/tweet-deletion frequency, and usage changes since the introduction of Timeline for Facebook users. Our purpose for these questions is to identify what type of users they may be and why they use these social networking sites. We then proposed our idea of expiring posts to garner their initial reactions, before pursuing their opinions on how to better integrate the idea with their natural usage behavior. On the occasion that participants replied in an ambiguous or fascinating manner, we would deviate from the prepared questions by delving further into their perspectives. We concluded each interview with demographic questions about age, ethnicity, occupation, education, self-reported computer expertise, and basic usage behaviors on Twitter/Facebook. We transcribed the recordings after each interview and analyzed for common and interesting patterns of behavior and responses. As the usage of Facebook and Twitter differs, we present each set of results below.

2.1.1 Facebook Results

The interviewees who used Facebook ranged in age from 18 to 49 with a median age of 26. Ethnically, our participants varied composing of 5 Caucasian, 5 African Americans, 2 Hispanic-Americans and 3 Asian-Americans; 7 males and 8 females. When asked about their frequency of posting, eight people admitted to posting daily, at a rate of at least two posts per day, and up to and around ten posts a day. Three people posted two or three times a week, and three people rarely posted (a couple of times a month). One person noted that the frequency depended on what was happening in her life or online.

Multiple questions asked about user’s current behaviors regarding deleting status updates and photos they posted to Facebook. Fourteen of our fifteen participants admitted to deleting posts on their own page with varying degrees of frequency. Six reported deleting once or hardly ever, three deleted often with one specifying deletion once per week, and two others reviewed and deleted items from their profile monthly or semi-annually.

When asked what kinds of information participants did not want on their profiles, they strongly opposed advertisements and game-related content; in fact, nine participants deleted posts that were deemed to be spam or advertisements. Participants also deleted posts due to misspellings of words and redundancy of content. Finally, five participants deleted posts written in emotional distress. If they felt viewers of their posts would be hurt or would have no interest in reading their posts, the post was deleted or hidden. However, most of the deleting occurs to posts on the user’s own wall. Ten of the fifteen interviewees noted they have not deleted a post made to other people’s wall. The main reason something would be deleted however is if there is some sort of misspelling, grammatical error and/or something written out of anger or immaturity.

After analyzing our results it seemed users were more inclined to make deletions that bothered or affected them in the short term setting rather than thinking long-term. A few mentioned managing their profiles long-term by removing old or outdated information. We then asked participants about their thoughts on Timeline to gain greater insight to their feelings toward Facebook’s newest interface. Timeline has made viewing old posts significantly easier, and we wondered whether participants were then prompted to consider or remove older posts. Many participants liked the new Timeline view, but a few were cautious over the added visibility:

“I haven’t fully figured out privacy settings or just the appearance of it. I do think it is kind of creepy that people can so easily figure out when what happened or find a specific event on a specific date. Like, if they’re like, ‘Oh I know this thing occurred around this date, let me go look for it,’ they can find it so fast now, and they just have to click on the year. I think it makes it too easy to stalk people on Facebook and I don’t like that aspect of it” [F-4].

However, only two participants admitted spending time cleaning their profiles as a result of the move to Timeline. We also queried participants’ views on the likelihood of others viewing their older posts. 80% of our participants reported visiting other’s profiles to view older posts, often referred to it as “Facebook stalking” and many expected that occasionally the same would happen to them. It became apparent to us, regardless of intentional or not, that Facebook stalking is common. We also asked participants about how important it was to them that their information remains on Facebook. Nine of our fifteen interviewees agreed there wouldn’t be too much of a problem if their status updates older than one year were to be deleted, as long as photos and links remained. Yet, three interviewees noted they disliked the idea of losing some of their information, and would find that “annoying” [F-13]. Two of our interviewees talked about how they liked the idea they could look back at past posts and reminisce about some of the good and bad times they’ve had. In other words, some participants seemed to inadvertently use Facebook as a ‘scrapbook’ to document their lives. Finally, we mentioned the idea of a tool for setting the duration of posts. When asked their initial thoughts on our project 67% of users felt this would be a useful tool.

“There are things like cartoons or something silly where I wouldn’t care if it disappeared but anything family-oriented or pictures or important posts, I would want that on for a long time. So if...you know when you posted, how long [you would] want this to stay on...that would be great” [F-13]. Participants expressed a range of durations, commonly mentioning weeks and months. Participants also mentioned using different durations for different types of content, and reiterated that they would like keep photos and certain status updates as permanent. “I don’t think I would set a timeframe for pictures” [F-3], even though other content they would make temporary.
2.1.2 Twitter Results

We interviewed 6 male and 4 female Twitter users. As with the Facebook study, we tried to gather thoughts and perceptions of a wide variety of users. Our interviewees ages ranged from 19 to 37. Our participants consisted of 4 Caucasian, 5 African Americans and 1 Asian American. The results of our Twitter interview greatly contrasted those of Facebook. Eight users tweet daily, with the reported frequency ranging from twice a day to ten to twenty times per day, with 1 user posting 100x/wk. Thus, the volume and frequency of posts were much higher than for our Facebook participants.

It became apparent that most tweets were made in a spur of the moment.

“Instead of doing like normal random or doing my everyday activities and posting them on twitter, I’ll post random funny thoughts or sarcastic tweets” [T-10].

As a matter of fact, six of our interviewees tweeted things they deemed to be sarcastic or random thoughts. Like our Facebook interviewees, over half of our interviewees cited misspellings as the main reason for deletion. Inappropriate content and ‘mean tweets’ summed up other reasons for deletion. Unlike our Facebook interviewees however, privacy never seemed to be an issue.

“I feel like everybody should see it... it's a social network what's the point in having a private twitter if only certain people can see it...” [T-5].

When asked if their profile was private 90% of our participants said no and one did not even know that was an option. Interestingly enough, only one person had an issue if their tweets older than a year were deleted. This trend continued when questioned if their tweets older than six months were to be deleted as well as one month or older. Yet, when questioned on their initial thoughts of our mechanism only three of our ten interviewees liked the idea. Five were neutral or unsure, and two disliked the idea:

“I don’t think that’s necessary because if something more of a permanent nature, then you would depend on something else like maybe Facebook, you know” [T-4].

Yet, the only qualm most interviewees had with our mechanism would be it would change their Twitter count.

“I wouldn’t want it to change my count. Twitter keeps track with how many tweets you have and it would be annoying it the count was messed up.” [T-2].

This led us to believe users of Twitter saw the content of their tweets disposable but enjoyed having a counter of how many tweets they’ve made.

“Honestly all my tweets can be temporary because [they are] just random thoughts” [T-5].

Yet, because they also realized it was more difficult to view older tweets with the Twitter interface, many did not see as much of a need for older tweets to be deleted.

After analyzing our Twitter results, we realized our application would have a greater impact if we focused on one social networking site. Since we had such a strong support for our system from Facebook users, we chose to create a prototype for Facebook users to use.

3. THE FACEBOOK TIMEBOMB

We next implemented our prototype for automatically deleting posts. We discussed several options including extensions such as Google Chrome and Firefox’s Grease Monkey and phone based applications. We ultimately chose to build a web-based application on top of Facebook’s API along with an Android version.

3.1 Web-based Application

Because we wanted users to be as familiar with our prototype as possible, we chose to mimic Facebook’s status update box as much as possible. In designing our application we kept in mind that users would expect the same functionality as our Facebook counterpart, therefore we supplied them with most of the same functionality.

Our prototype application, named the Facebook TimeBomb, or F Bomb for short, allows users to make status updates, upload photos, tag friends, and modify all privacy settings as offered by Facebook such as Public, Friends, Self, and Custom. Our prototype however offers the key distinguishing characteristics of a ‘post duration’; which allows users to set a ‘duration’ to a post after which the post will be deleted automatically. We have three options for the post duration, which include: one week, one month, and permanent. We chose these settings based on popular responses from our initial user interviews.

Users are also shown posts they have made previously with the application, with an additional option to change the post duration. Being able to change the post duration allows users to maintain full control over the privacy of said posts, and later remove information sooner, or make something permanent.

Figure 1. F Bomb

The posts that users make are added to their Facebook profile just as any other post, by making calls to Facebook’s Graph API. Once a user has logged in and granted access to our application through permissions, like any other Facebook application, we are given an authorization token which allows us to gather pertinent information from our user such as their friends. Calls are made to Facebook’s graph, which enables users to post status updates as well as upload photos. We also make calls to Facebook, allowing these same status updates and photo updates to be deleted. It is
important to note however only status updates and photo uploads that are made through our application can be deleted. Facebook’s API will not allow any application to delete posts made outside of that application. Thus, we cannot use our application to allow users to modify the lifetime of posts they make through the normal Facebook interface.

3.2 Android Application

Our android application allows users to post status updates from their android devices and maintains the initial ‘post duration’ option. We wanted to make our application accessible to users while they were way from a traditional laptop/desktop. We were limited however in being able to offer users of the android application some of the functionality as offered by the web based application such as the ability to read, and change the duration of former statuses/photos. Users are encouraged however to make any additional changes to their post duration via our Facebook based application.

4. F BOMB USER STUDY

Our goal in building the prototype is to examine user’s behaviors when posts are no longer always permanent. We plan to deploy the prototype, examining changes in sharing behaviors, changes in perceptions of sharing, privacy and trust.

4.1 Methodology

We will again recruit a variety of participants, this time through advertisements made on Craig’s List and Facebook. Participants will be directed to authorize our application, receiving initial descriptions of the study and expressing consent as part of the initial use of the application. Once users have approved our application on Facebook, we will accompany it with a pre- and post- survey. Our pre-survey will be a combination of questions regarding the users perceptions of social networking behavior, privacy, and sensitivity of their posts. We’ve decided on a deployment time of a month, during which users will be randomly be given mini-surveys asking about the content of their posts. After our deployment, users will be given a post survey that will consist of some of the same questions as asked in the pre-survey in regards to perceptions as well as their thoughts to our prototype. We then intend to compare behaviors and perceptions.

4.1.1 Current Status

Because of time constraints, we were unable to deploy our prototype. Currently we are in the testing and debugging stages of our project. The user study will be conducted in the coming months.

5. CONCLUSION

Social media is now a ubiquitous part of our society. As users are now maintaining profiles over the course of years, and soon decades, we want to examine the impact of this long-lived information. Throughout the course of the summer, we’ve studied different users of two of the largest SMS, hypothesized based on responses made within our interview study, and developed an application that allows people to predetermine the date of their posts to be deleted.

Through our interview we’ve been able to conclude a large percentage of Facebook users see their walls as a sort of ‘scrapbook’ where they sought solace knowing they could go back and reminisce about the past. Their Twitter counterparts however seemed less inclined to bother with a notion of permanence, instead prioritizing a ‘count’ but with less concern with the actual content remaining online. The introduction of Facebook Timeline, we learned, worried users about the increased risk of Facebook stalking, however only two users took the time to clean our their pages. We are hoping the results of these two studies can prove guidance to the future design of privacy preserving interfaces on social media sites.

6. ACKNOWLEDGMENTS

My thanks to Dr. Heather Lipford for her guidance throughout the summer, Berto Gonzalez, Andrew Besmer and Jason Watson for their help and endless support. Finally to my lovely co-workers Irene Kwok and TaKayla Sexton for their hard work and dedication to keep this project rolling. Finally to DREU for giving me this opportunity.

7. REFERENCES
