

Privacy Perceptions of Photo Sharing in Facebook

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1. INTRODUCTION

Online photo sharing applications are increasingly popular, offering users new and innovative ways to share photos with a variety of people. Many social networking sites are also incorporating photo sharing features, allowing users to very easily upload and post photos for their friends and families. For example, Facebook is the largest photo sharing site on the Internet with 14 million photos uploaded daily [2]. Integrating photo sharing within social networking communities has also provided the opportunity for user-tagging, annotating and linking images to the identities of the people in them. This feature further increases the opportunities to share photos among people with established offline relationships and has been largely successful. However, this increased access to an individual's photos has led to these images being used for purposes that were not intended. For example, photos on Facebook profiles have been used by employers [5] and law enforcement [6] to investigate the behavior of individuals. We are focusing on these privacy concerns and needs, as well as exploring ideas for privacy protection mechanisms, for users of social networking sites such as Facebook. In understanding user's current concerns and behaviors, we can design tools they desire, adopt, and ones they will be motivated to use.

Photo sharing is an important component of many general online social networks. Researchers have examined over disclosures and potential risks of personally identifiable information on Facebook [3][4]. However, little work has investigated privacy specifically in this domain of photo sharing in online social networks. We expect that the large social networks that users tend to build and the inherent linking of photos to other personal information about users will lead to different concerns, strategies, and needs regarding privacy management.

2. STUDY

We conducted a study consisting of three focus groups composed of 14 total participants. Participants were recruited by flyers posted on campus and solicitation from undergraduate classes at the university. We demonstrated the current Facebook photo application and tagging feature to participants. They were asked several questions regarding their use of the photos application, if they ever untagged themselves, and any privacy concerns. We also demonstrated a prototype for blurring faces in photos, shown in Figure 1, to generate more discussion on potential privacy tools and protections. We asked participants about issues surrounding these tools, such as photo ownership, as well as ideas for other privacy mechanisms. The conversation was recorded for later analysis. After transcribing each of the focus groups, we coded each focus group for both common and interesting remarks. We then grouped these categories into several overarching issues.



Figure 1. Example of Facebook and Prototype

3. RESULTS

As with other photo sharing sites, users expressed the social value of being able to upload and view photos within their social networks. No doubt this social value is the reason 14 million new photos are added on Facebook each day. However, not surprisingly, users do have privacy concerns that are difficult to deal with due the wide reach of their images and the lack of control over the disclosure of many photos. In discussing privacy issues surrounding this usage, users expressed a number of general concerns for certain information they do not want to be seen by other people. They also discussed their current mechanisms for coping with these concerns. The issue of photo ownership was brought up throughout discussions as well.

3.1 Concerns

We were surprised to find that users were often keenly aware of specific individuals or groups of individuals who they were concerned of seeing an unwanted photo of them. These concerns were about those who were already within their social circles. Family members such as parents, sisters, and brothers comprised most of the perceived threat. In no case did a participant express concern of a stranger finding their photos, and deriving their personal location or personal information from them. This differs from results from previous studies on Flickr, where researchers explored why users chose to disclose images publicly [1]. Thus, privacy concerns in this domain are not about security concerns but instead about identity and impression management within a user's social circles.

Another commonly cited concern was photos containing "incriminating evidence". The most frequent example cited by participants was being intoxicated. For some, the reason was that they were underage and the photograph proves an illegal activity has occurred. Others such as P7, who is a member of a university sports team, reported being tagged in "a lot of photos", and worried about photos of him being inebriated. P7 says, "I'm not allowed to be seen in photos on Facebook with alcohol or anything like that because I'm on the [sports] team..." Participants also noted that they untagged photos in order to disassociate from people or groups. P5 explains, "it's just I don't

wanna be associated... or maybe something happened we are not friends anymore". Thus, users are aware and interested in shaping their identity based upon their associations with different people and groups, and interested in controlling accessibility of certain photos for that reason.

Users also expressed a great deal of concern over their lack of control in removing photos from Facebook and from friend's profiles. While users can un-tag to remove the explicit reference to them, the photo remains close to them because it is cross-linked to others in the photo and remains accessible from other profiles.

3.2 Coping With Concerns

Many participants have modified their behavior, both online and offline, to cope with the use and popularity of Facebook photo sharing. First, several users do report frequent un-tagging: "I spend probably an unhealthy amount of time un-tagging pictures on Facebook." Participants also changed their everyday behavior to prevent undesired photos from being taken in the first place. This occurred by trying to stay out of pictures as much as possible and by also not behaving in ways that the user would not want recorded in the first place. Despite these strategies, many users expressed their expectation of ending up in photos online that they do not want posted.

Interestingly, tagging was also seen to have some positive privacy benefits by making people aware of the photos that have been posted of them by other people. P8 explains, "What if its pictures out there that you're not tagged in? How do you know that the picture is out there..."

3.3 Ownership

Ownership is an important issue in photos for online social networks, as many users upload photos of other people. We questioned the social acceptance of modifying or deleting photos that perhaps seem to belong to other people. Even before we asked direct questions about ownership, participants naturally brought it up regarding their general concerns and problems of photo sharing. We used our prototype which blurred faces to provide a concrete example for participants to talk about the issue. There were two main perceptions participants had regarding ownership of photos. The first, but less widely adopted, opinion is that each individual in the image is a co-owner of that image. The second and more popular opinion is that the uploader of the photo remains the owner regardless of those in the image. They expressed however, that there was a "moral obligation" on the owner to protect the privacy of those in the photo.

Decisions about disclosures were often made by others through tagging. In essence, other users are determining the privacy boundaries on the user's behalf without consulting them. There are almost no tools on Facebook to alter the permanency of others' decisions within the social network. Users seem to have almost given up on being able to maintain their privacy in online photos, and instead hopelessly are accepting that privacy problems will occur.

3. CONCLUSION

Photo sharing through online social networking sites are allowing huge numbers of people to upload and socially communicate around photos. However, users have lost control over their identity and disclosures as other users can upload and tag undesired photos. Additionally, users are struggling to manage their identity through the contents of photos across multiple audiences and the many people in their social networks. Users desire and need more tools to allow them to regain control over their privacy, and manage their privacy decisions over time.

Users want these tools to respect everyone's rights and provide a fair playing ground for all. However, in being driven by impression management concerns, users may also not be motivated to alter their behavior or use tools that do not fit in with their existing activities or that protect against other potential threats such as strangers using photos to infer location or personal information. While Facebook does already have extensive privacy controls, users did express desire for more fine-grained controls over the accessibility of individual photos linked to them.

While this study focused on Facebook in particular, other social networking sites are adding similar features. For example, MySpace recently added the ability to tag other users in photos. Thus, the concerns and issues we discovered will likely be applicable to other general social networking sites with photo sharing. As these sites continue to grow in popularity and users add more and more photos, meeting users privacy needs is important to allow safe and comfortable participation on these online communities.

8. REFERENCES

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