

# Poster: Examining Confidant Disclosures through Facebook Apps and Tagging

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## 1. INTRODUCTION AND BACKGROUND

People love to share their thoughts and daily activities with others on Facebook and other social network sites. But how do they feel about others sharing this information about them, often unknowingly? Consistently, Social Networking Site (SNS) privacy research tends to narrow the definition of SNS privacy to mean the regulation of private versus public self-disclosures [1]. This conceptualization comes most readily from Petronio's well-known Communication Privacy Management (CPM) theory, an extension of Altman's work on interpersonal boundary regulation, that specifically deals with private disclosures [2, 3]. However, Petronio identified *two* types of private disclosures: self and other. Confidants are the "others" that co-own shared private information. When private information is collectively owned, coordination is necessary to prevent privacy violations [2]. Therefore, we are interested in better understanding privacy preserving behaviors that focus specifically on managing these confidant disclosures within SNSs. On Facebook these confidant disclosures come about primarily through tagging photos and other posts, and through third-party apps that access friends' profile information.

In this paper, we examine a variety of independent factors that we believe affect users' privacy-preserving behaviors concerning third party app sharing and photo tagging in Facebook. Specifically, we examine the behaviors and impressions surrounding what are shared by friends through third party apps, and how users deal with unwanted tagging in photos. This is important because most related research in this area tends to focus on how we manage our own privacy, not on how we manage what information others share about us. We develop a set of hypotheses that relate user's knowledge and impressions to their behaviors, and present the preliminary results of a survey study of Facebook users.

### 1.1 Third-Party Apps

Most research on third-party Facebook apps has focused on the direct privacy threats from self-disclosure through apps used by an individual. However, very little research has looked at how individuals are affected by their friends' use of apps. By default, apps installed by a user's friends can collect the personal information of that user, even if this user has never allowed or even personally chosen to visit that app. The ease of access to private information and the explicit lack of knowledge by either participant that this sharing is even occurring may lead to privacy violations as the sharing is occurring outside of the expected context [4]. Researchers have found a disconnect between what users understand about information sharing through apps and what actually occurs with these within

Facebook. Therefore we find it important to take a closer look at exactly what mental models Facebook users form around these concepts and what they do to protect their privacy.

### 1.2 Tagging

Currently, the ability to tag in Facebook extends to linking any person, page, or place to anything that is posted, including status updates, comments, or app activity [5]. There has been a limited amount of research related to tagging in social networks and the privacy issues associated with it. For example, one study that specifically focuses on photo tagging recognizes the need to address the social implications of photo privacy management [6]. While the number of photos being uploaded to Facebook increases dramatically, along with the accuracy of facial recognition technology in photo sharing sites, the privacy controls that are in place to balance this are not equivalent. Related research somewhat mentions photo tagging in relationship to confidant disclosure, but none have addressed tagging in depth as an entire study. That is why our research emphasizes tagging in its entirety, in order to learn what causes users to manage their tagging settings in relationship to privacy and confidant disclosure.

## 2. FRAMEWORK

Our goal is to identify the factors that relate to users' privacy preserving behaviors concerning confidant disclosures. We first developed a framework based on past research to help identify these factors and form hypotheses. We also discuss the privacy-preserving behaviors we focus on in our study, and then briefly discuss the independent variables we examine.

### 2.1 Privacy Preserving Behaviors for App Sharing and Tagging

With the third-party apps that are used in Facebook, there are certain settings and actions built into the site that contribute to control of privacy. These include what information people can bring into apps they use, blocking app invites from friends, and blocking apps directly. On the other hand, there are fewer built-in settings or actions that can be done to preserve privacy when it comes to tagging, such as untagging a photo. Otherwise, other behaviors can be considered coping mechanisms, like ignoring the content, requesting a user take down a photo, compliance through avoidance of situations that would cause them worry about being tagged, and even unfriending a user. All of these behaviors, both technology-supported and coping-based, serve as the dependent variables we seek to explain in the context of the following independent variables.

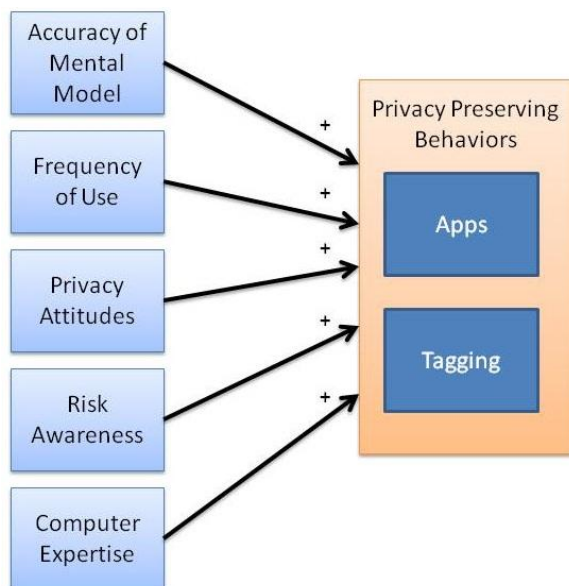


Figure 2. Our Research Framework

## 2.2 Independent Variables

Based on previous research, we identified a variety of measures we believe may relate to how frequently users take privacy-related actions. The first is how accurately users understand the platform itself – whether they understand what apps are capable of accessing, and how tagging works. We developed a set of questions about how apps and tagging work to measure this accuracy of understanding. We also hypothesize that those who use apps and tagging more frequently, have greater general privacy attitudes, higher risk awareness, and greater computer expertise are more likely to perform privacy-preserving behaviors. For each of these variables, we use pre-validated measures from past research [7, 8].

## 3. METHODOLOGY

We are currently examining privacy-preserving behaviors and our hypotheses through an online survey, distributed by snowball sampling, to gather information about the different factors that impact users when it comes to photo tagging and app sharing. While this survey does rely on self-reporting, it is being done while participants view their own account settings, which enables users to accurately report their privacy settings at that present time.

## 4. RESULTS

Although our research is ongoing, the point at which we conducted an analysis of results included 65 participants, 24 males and 41 females. The youngest participant was 18, and the oldest was 71. A large group claimed to be of intermediate Facebook expertise (56.1%) or higher (18.2% advanced).

Preliminary data shows less than one fourth (23%) of participants correctly answered how third-party apps can access their profile information and over half (52%) either do not know

or incorrectly believe they are notified when an app shares their information. Both results suggest a low accuracy of mental models concerning apps. We noted two privacy preserving behaviors, limiting the number of apps and blocking app invites, were infrequently applied. These results indicate a relationship between an inaccurate mental model and low usage of privacy preserving behaviors with third party apps.

Conversely, our data shows twice as many participants (52%) demonstrate increased risk awareness concerning being tagged by friends in both photos and posts. They also frequently employ privacy preserving behaviors such as “untagging” a photo and asking friends not to post photos of them on Facebook. Qualitatively this supports our hypothesis that accuracy of a user’s mental model is correlated to performing privacy preserving behaviors. We will quantitatively validate this and our other hypotheses with structural equation modeling when we have gathered sufficient survey responses.

## 5. CONCLUSION

We have presented preliminary descriptive results of our survey investigating users’ behaviors and impressions towards confidant disclosures on Facebook. Our results thus far indicate that users generally have an inaccurate mental model of both apps and tagging. We are continuing to gather survey data so that we may conduct hypothesis testing, in order to determine the relationships between mental models, frequency of use, importance of personal privacy, and risk awareness with privacy preserving behaviors for both app sharing and tagging.

## 6. REFERENCES

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