See Friendship: Interpersonal Privacy Management in a Collective World

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ABSTRACT

The feature of "See Friendship" was launched in late Oct 2010, which chronicles the history of social interactions between two friends (e.g., wall conversations, photos both are tagged in, comments they share, and mutual friends, etc). As soon as this new feature automatically replaced prior Wall-to-Wall feature on Facebook, it triggered users’ privacy concerns, discontent, anxiety, as well as mass media’s questioning of privacy breach. In this research, we conducted two stages of studies to examine interpersonal privacy concerns surrounding this feature. By applying a user-centered design approach, we first investigated users’ privacy needs and expectations through a qualitative study, followed by our proposed new interface designs for privacy control options and evaluation. Our results highlight the tension between users’ social needs and interpersonal privacy that involves peers' information privacy. This work provides preliminary conceptual and empirical insights in terms of design implications to address the tensions in interpersonal information privacy management.

Keywords  
Online Social Networks (OSNs), interpersonal privacy, friendship, Facebook.

INTRODUCTION

With the booming popularity of Online Social Networks (OSNs), tremendous number of users maintains an active profile and share personal information, activities, opinions, photos and videos on OSNs. According to Social Media Today (2010), 41.6% of the U.S. population has a Facebook account. OSNs have therefore become a popular medium and tool for social interactions, involving high-volume of information exchange.

The intensive propagation of personal data introduces a variety of privacy risks for users of OSNs (boyd & Ellison, 2008; Egelman et al., 2011; Gross & Acquisti, 2005). An additional dimension that represents the complexity of studying privacy risks in this context is added by the highly dynamic social interactions with rich data exchange. Users are actively creating contents that may not only reveal their own identities but also connect with their social circles. Such collaborative and interactive activities raise a new set of privacy challenges, because a person’s private information can be easily revealed by contents created by others. The need for interpersonal privacy management arises due to the inability to monitor others on the network and being uncertain about their behaviors. Even if some users think they have tight privacy settings, their personal information could be accessed or misused by unauthorized parties due to their friends’ ignorance of privacy and security (Kelly, 2008).

The objective of this work is to extend the notion of privacy from an individual user’s perspective to an interpersonal perspective. We argue that interpersonal privacy management differs from personal privacy management because of its change of agency (from the self to a group), its inclusion of interactional privacy decision making, and its collective domain where the user and her social ties share responsibilities for keeping their shared data safe and private. Based on the insights learned from the case analysis of the Friendship Pages on Facebook, we conducted a preliminary interview-based study to explore the interpersonal privacy needs and concerns of users. Towards an in-depth understanding of users’ interpersonal privacy concerns on OSNs, we developed design heuristics and proposed new interfaces for users to manage friendship information on Facebook, followed by preliminary user evaluations. The paper concluded with a discussion of theoretical and design implications, and directions for future research.
INTERPERSONAL PRIVACY MANAGEMENT IN A COLLECTIVE WORLD

As the largest OSNs in the world, Facebook has achieved great success by engaging millions of users. Users create immense amount of information and contents on Facebook. For example, an average user creates 90 pieces of contents every month on Facebook (Facebook Statistics, 2011). Why do people participate in Facebook so intensively? It has been suggested in prior research that relationship maintenance and self-presentation are two major motivations of using OSNs among users (Acquisti & Gross, 2006; Dwyer, 2007; Levin et al., 2008).

Not surprisingly, users post large amount of social interactional information (e.g. profile, wall conversations, tagged photos, mutual events, etc.) within their social circles to maintain their own images and their social relationships. In such a highly connected environment, the notion of privacy is not only about protecting information from unintended audience but also how the information is collectively managed and interpreted by social ties. For example, social interactions and information on a partner’s Facebook wall may lead to jealousy (Muise, Christofides, & Desmarais, 2009) or faulty interpretations (Tokunaga, 2010). In social media, privacy has been viewed as a dynamic process of maintaining boundaries among social circles, and becomes an interpersonal issue when the actions of one user affect the relationships of another user.

Furthermore, the information boundary between an individual user and his/her social ties on Facebook becomes turbulent when new features are introduced to attract users to share more contents and spend more time on Facebook. Users not only vocalized their worries and privacy concerns towards new features publicly, but also took actions to address their privacy concerns, including limiting social interactions, terminating connections, giving false information, and even quitting OSNs (Stutzman & Kramer-Duffield, 2010).

In Oct 2010, the introduction of Friendship Pages further blurs the boundary between individual users and their social circles, which makes the interpersonal privacy management issues more complex than ever. As shown in Figure 1, this new feature aggregates the interaction history between two Facebook friends. On a friendship page between a user and any of her Facebook friends, the user is able to see wall conversations between herself and her friend, photos that they both have been tagged in, mutual friends, mutual events which they both attended, and mutual pages they both “like”.

![Figure 1. Illustration of Friendship Page (Adapted from (Pixel Coaching, 2010))](image)

As illustrated in Figure 1, a user could not only browse her friendship with one of her friends, but also search friendship information between any two friends whom she is connected with. Overall, functionalities enabled by this feature aggregate all the social interaction details between two friends on Facebook, which may encourage more social interactions among users by providing longitudinal interaction information in a conveniently accessible manner. However, such aggregation of pieces of longitudinal interaction information between two friends may also trigger users’ privacy concerns.
There has been little research examining users’ reactions toward a socially interactive feature like the Friendship Pages on Facebook, particularly users’ interpersonal privacy needs related to relationship development and maintenance. Researchers have only just begun examining the design of privacy enhancing features associated with interpersonal privacy management. For example, a study of photo “tagging” and “untagging” on Facebook has exposed the complexities of interpersonal privacy issues, the tensions of content ownership, and the effects that one user uploading and tagging a picture of another user can have on the latter’s relationships with friends, family, employers, etc. (Besmer & Lipford, 2010). Other studies have developed collaborative privacy policy composition protocol (Squicciarini, Xu, & Zhang, 2011), proposed interface design to support user collective awareness of privacy risks (Besmer, Lipford, & Shehab, 2009), and the access control interfaces which account for the interplay between overlapping social networks (Egelman et al., 2011). However, we are not aware of any study that has examined interpersonal privacy issues related to relationship development in OSNs, nor the specific privacy problems encountered with the use of the Friendship Pages on Facebook.

**USER-CENTERED INVESTIGATION**

Friendship Pages not only summarize the interaction history between a user and her friends, but also provides an express way for the user to gain equal amount of information that flows between any two friends whom she is connected with. Given such complexity of social dynamics, we adopt a user-centered approach (Norman, 1986; Pchuler & Namioka, 1993) by first conducting a conceptual analysis of the central concepts and issues involved with friendship privacy concerns. We then examined users' privacy needs and expectations through a preliminary interview-based study.

**Conceptualizing Values**

OSNs tend to mirror a user’s social life into a connected online environment. Therefore, social values which are regarded as important to individuals in offline environment are also passed on to the online environment. As identified by prior research, maintaining relationship with friends is considered as one of the most useful function for users of OSNs (Dwyer, 2007; Hoadley et al., 2010; Joinson, 2008; Lampe, Ellison, & Steinfield, 2006). OSNs provide a variety of means for users to get connected with friends such as posting comments, browsing news feed, uploading photos, and organizing events together, etc. By doing so, individuals are able to manage their social circles and increase social capital.

Unsurprisingly, users’ privacy concerns have been fueled by explosive amount of information shared and distributed on OSNs. Furthermore, insufficient or ineffective privacy control features on current OSNs aggravate users’ worries. Palen and Dourish (2003) pointed out that “privacy management involves satisfying a number of needs, and balancing a number of tensions.” Users who want to share information often face a dilemma between potential privacy risks and their desires to share information and content. On one hand, users expect to communicate with friends smoothly. On the other hand, they may worry about unintended information disclosure or stalking from unexpected audience. The interplay between users’ needs for developing social relationships and their concerns about this interpersonal privacy is not yet clear. Will users’ desires for social interactions override their interpersonal privacy concerns? Or will users’ privacy concerns limit their social interactions on OSNs? Given the complexity of interpersonal privacy issues related to relationship development in OSNs, we anticipate that effective and usable designs of privacy control features would be able to alleviate and address the tension between users’ social needs and privacy concerns.

**EMPIRICAL INVESTIGATION: A USER STUDY**

Facebook users expressed a considerable amount of discontent and privacy concerns toward the launching of Friendship Pages (Facebook Blog, 2010). In order to provide richer insights on users’ behavioral dynamics and social interactions in managing friendship information (e.g., the display of what information on the Friendship Pages would trigger users’ privacy concerns), we conducted an interview-based study (n=20) to explore interpersonal privacy issues at a fine-grained level. We considered asking one’s relationship privacy as a sensitive topic, because there may be social implications to responses people give. When collecting data about sensitive topics, it is appropriate to utilize open ended questions to allow respondents to express themselves in a way that they do not feel threatened, allowing respondents to say as much or as little as they would like and not be confined to a limited set of answers that are available in a Likert-type survey design.

Participants were recruited from junior/senior levels of undergraduate classes at a public university in the United States. We specified that participants must be active Facebook users. One extra credit point was awarded for their participations in this study. There were a total of 20 participants who participated in this user study. Among these participants, 4 were female and 16 were male; and they identified their ages as 20 to 24.

As the first step, we gave a brief but informative introduction on Friendship Pages to assure that each participant was aware of the functionalities. We provided three usage scenarios to participants, which were to view friendship pages:

1) between the user and one friend of this user (U-UF),

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2) between two of the user’s friends (UF-UF), and
3) between one friend and this friend’s friend (UF-UFF).

Throughout this paper, we presented these three scenarios using codes ‘U-UF’, ‘UF-UF’, and ‘UF-UFF’, respectively.

Understanding the Users

All participants indicated that they either had noticed about or had used the Friendship Pages before. We asked them whether they had used it to view friendship information and interactions: 1) between themselves and their friend (U-UF), 2) between two of their friends (UF-UF), and 3) between their friend and their friend’s friend (UF-UFF).

In the UF-UF scenario (Scenario #2), we presented two available approaches on Facebook to access the friendship page between two friends of the user:

a) Search to See Friendship: Users can view the friendship page between any two friends whom they are connected to by inputting their names in the highlighted box (see Figure 2a). When they hit “See Friendship”, they are directed to the friendship page between these two friends. The user must be friends with both people to see the friendship page between them.

b) Browse to See Friendship: The second approach is shown in the red box in Figure 2b. Users can access friendship pages directly from the wall. Certain activity items (e.g., a wall post from friends) will display a “See Friendship” link next to them. In this case, users can just click the hyperlink of “See Friendship” and they will be able to see the friendship page between two of their friends.

Most participants said that they somehow used both approaches to view friendship pages in all scenarios (U-UF, UF-UF by Search, UF-UF by Browse, and UF-UFF). In particular, viewing friendship information in the scenario of U-UF was used more frequently than it was in other scenarios. Under each scenario, participants were asked to indicate their privacy concerns. It appeared that privacy concerns of viewing friendship between the user and one friend (U-UF) and between one friend and the friend’s friend (UF-UFF) were higher than that between two of the user’s friends (UF-UF by Search, and UF-UF by Browse).

For the UF-UFF scenario illustrated in Figure 3, the user was not a friend of Pam Ruggles but Pam’s privacy settings on “Things I Share” were set as “friends of friends”. In this case, this user was considered Pam’s friend of friend and thus had the option to “See Friendship” between Pam and her friend. We further asked participants whether they thought it was useful to have the “See Friendship” displayed in the scenario of UF-UFF. Interestingly, most participants considered viewing friendship in the scenario of UF-UFF as privacy breach. They indicated that the friendship information should be only available to the two friends and anyone else should gain consent from the two before viewing their Friendship Pages. In a follow-up question regarding potential actions they would take after reviewing Friendship Pages feature, two-thirds of participants indicated they would set their profiles less visible to avoid unwanted viewing but one-third said they would not change their privacy settings.
As we discussed earlier, six different types of information were displayed on the Friendship Pages, including 1) Wall conversations between two friends, 2) photos that both were tagged in, 3) comments they shared, 4) mutual friends list, 5) mutual events they both attended, and 6) mutual pages both “like”. We asked participants about their comfort levels for having these categories of information displayed on their Friendship Pages. Collectively, participants were most comfortable with mutual friend lists while least comfortable with Wall conversations displayed on the Friendship Pages, which reflected participants’ sensitivity levels for different types of information. Furthermore, our results revealed that the aggregated information items displayed on the Friendship Pages were not considered appropriate or usable by most users, because users often have different levels of sensitivity toward different types of information items.

**Users’ Privacy Needs**

In our user study, we also asked several open-ended questions to understand users’ interpersonal privacy concerns. These user responses provided insights in terms of participants’ privacy attitudes and preferences on the Friendship Pages.

- **Overall likeability**

  Two-thirds of our participants clearly stated that they did not like the feature of “See Friendship”, which they perceived as privacy invasion. Their concerns were centered on unknown visitors’ abilities to view their social interactions between friends, even when those visitors were their friends’ friends. For example, one participant said:

  “That let me feel unsafe and uneasy! It let me feel nervous, because I must be very very careful to set my privacy control, otherwise, I will show myself to my friends of friends.”

  In addition, positive and negative attitudes toward the Friendship Pages co-exist in our user responses. On one hand, helping users memorize social interactions was considered fun and enjoyable to some users. On the other hand, participants mentioned that this feature definitely needed further improvement in terms of privacy control. Only one participant indicated that s/he liked this feature for easier way to access interactions between friends.

- **Users’ understandings of friendship privacy issues**

  Participants were asked the extent to which they perceived the way that information aggregation and display on Friendship Pages as a design change or a privacy change. All participants indicated that they did understand the amount of available information was not essentially changed on Facebook. However, most participants still emphasized their worries on privacy, because they thought that the aggregated friendship information increased its accessibility to a larger range of audience who would have a smaller chance to view without this feature. For example, one participant complained:

  “You are not making a person look for the information now, you are handing it to them gift wrapped... have made it a lot more easier for people to be invasive.”

  In addition, some participants pointed out that easier access to friendship information would motivate or encourage people to stalk and track friends, which was disturbing. Even with all the information publically available, the Friendship Pages made users feel very uncomfortable by putting information in a single place. For example, one participant highlighted the negative association between the ease of information access and perceived privacy control – “the more difficult to get to the information, the less possible privacy will be invaded.”

- **Perceived and actual (if any) outcomes**

  Most participants indicated they changed their Facebook privacy settings after using the features Friendship Pages. They also said they would be more cautious to add new friends on Facebook from now onwards. One-fourth of participants anticipated no changes in their privacy settings, because they recognized themselves as very cautious users. Nevertheless, they mentioned that this feature may influence average users in negative ways if they were not cautious in terms of adding strangers as friends.

  Participants also mentioned some positive outcomes of using See Friendship feature, including expanding social circles, easier ways to recall memorable moments between friends, and more pleasant experience to view friendship development. However, negative outcomes identified by participants outweighed positive ones. Some participants mentioned the potential
risks of unwanted exposure to unknown audience and the concern of stalking. One of them even said that “the Friendship Pages would promote stalking activities throughout social circles”. Furthermore, one participant indicated that this feature might make existing friend circle “dramatic” because more stalkish behaviors would be expected to happen, which may influence the relational status of users’ social networks. Another participant further expressed his anger on: 1) not being informed when Facebook released such features, and 2) not being provided with any direct privacy controls.

- **Appeals and expectations**
  Given the fact that Facebook has no specific privacy control mechanisms for Friendship Pages, we asked participants to describe their desired control features for controlling relationship privacy. Some participants express their needs for an opt-out button, and others called for finer granularity of privacy control encompassing who will be able to see what information. Nine participants expressed their needs for more control features to customize who can view what kind of information. One participant indicated s/he would like only mutual friends of two persons to view their friendship pages. A thought-provoking suggestion was closely pertained to the concept of “friendship”; one participant recommended to set pass-codes for viewing Friendship Pages and these codes were related with a user’s personal data, which was supposedly known by his/her associated others, namely friends.

**PROPOSED DESIGNS**

**Design Heuristics**
Our preliminary qualitative study has gained some insights in terms of users’ attitudinal and behavioral responses to the introduction of Friendship Pages on Facebook. Furthermore, it identified several opportunities for better privacy control and management to address collective privacy concerns brought by the Friendship pages on Facebook. Although we are conscious of the fact that there is no panacea for privacy, there is room for serious improvement. Our results suggest several privacy design heuristics for better managing friendship information.

- **Freedom of choice** – as Facebook released and modified features all the time, users expect to have freedom to choose to adopt or not adopt certain features.
- **Known audience** – users know exactly who is able to view his/her information.
- **Known information transitive path** – users know their personal information is able to be obtained through what paths in social networks.
- **Known information** – users know what information pertained to them is visible or invisible.
- **Information sensitivity** - users hold different sensitivity levels for different types of information.
- **Stay informed** – users should be informed when there is significant change regarding their information on social networks.
- **Responsibility to promote awareness** – users should be aware of corresponding update in privacy management in response to feature change/release on social networks.

These design heuristics fall into different perspectives, including both end-users and service providers of OSNs. Although service providers of OSNs need to take more responsibilities to provide users with privacy control options and to better inform users, we do not take that into account for our proposed design. As we see in the description of these design considerations, some heuristics are not mutually exclusive to each other. In order to figure out both advantages and disadvantages for different design heuristics, we tend not to package all the heuristics to generate a new design. Instead, we adopted a divide and conquer rationale for a more clear-cut analysis.

**Alternative Interfaces**
As discussed earlier, there is no specific mechanism to control the display of friendship information on Facebook. Although the design team of Friendship Pages suggested users to use existing privacy setting which controls the visibility of profile information (Facebook Blog, 2010), the efficacy of such approach is questionable. Users could get easily frustrated by the complexity of privacy setting mechanisms on Facebook, especially along with newly introduced features.

Envisioned by design heuristics and previous discussions, we present our alternative interfaces for friendship information management in this section. As we highlighted earlier, we are aiming to present independent and neat interfaces representing separate aspects derived from design heuristics. The reason of doing so is two-fold:

1) Considering the complexity of friendship privacy management, we tend to address the problem in a progressive fashion. Instead of trying to provide an overall solution, we are more interested in clear-cut solutions for break-down problems.
2) As indicated before, there may exist overlap between design heuristics and users’ needs. It would be necessary to investigate possible interactions between them. As a result, we propose three alternative interface designs for users.

*All-or-Nothing Design*

Our first interface is trying to fulfill the heuristic of the **freedom of choice**. Our user study highlighted the appeal for at least an option or a turn-off button. To address this user need, we proposed our first interface shown in Figure 4. In order to be consistent with the privacy setting interface in Facebook, we added the option of *Enable/Disable* for Friendship Pages and description of its functionality in the privacy setting page.

![Figure 4. All-or-Nothing Interface](image1)

![Figure 5. Specify-Audience Design](image2)

*Specify-Audience*

Align with the design heuristic **Known audience**, we present our second interface. Similar to the privacy control option for sharing News Feed on Facebook, in the way to access Friendship Pages, we attempt to enable users to control the audience of friendship information, as shown in Figure 5 below. Compared with the all-or-nothing design, this interface shown in Figure 5 provides users with a better fine-granularity control. As a handy option, users could set the visibility of “See Friendship”, which is the Friendship Page between the user and his/her friends. A control box is laid next to the “See Friendship” label, which has a drop down menu indicating different audience users would like to expose to.

*Specify Content*

Our third interface (see Figure 6) is directly derived from the design heuristics **Known information** and **Information sensitivity**. For different information that users have discrepant concern levels, we attempt to provide users with control over the visibility of different information. This design enables users to control the visibility of shared contents, a different dimension from the audience design. For the six categories of data displayed on the Friendship Pages, users are able to decide which ones to be visible or invisible according to their own preferences and comfort levels.

![Figure 6. Specify-Content Design](image3)

In sum, the three alternative interfaces emphasized different aspects of design heuristics we generated from our conceptual and preliminary empirical investigations. Next we present our evaluation study to examine to which extent these proposed designs are able to address users’ needs for relationship privacy.
Preliminary User Evaluation

In our second stage of our user study, we aim to evaluate the three design interfaces presented, involving the same twenty participants as in stage one. After participants learned about our proposed three interfaces, we asked about their intended settings of these privacy control features, followed by a series of open-ended questions asking their preferences, perceived effectiveness, and their critiques and suggestions for privacy designs in this domain.

For the All-or-Nothing design, most participants \((N = 16)\) indicated they would disable Friendship Pages, if this privacy control feature was available. Four participants would choose to enable Friendship Pages. In terms of users’ intended settings for Specify-Audience, it seems all participants preferred strict levels of settings: twelve participants chose “Friends Only” and eight of them chose “Customize”. Regarding users’ intended settings for Specify-Content, most \((N = 17)\) participants would set their Wall posts, photos, and comments as invisible on Friendship Pages (see Figure 7 for more details).

![Figure 7. Stated Setting for Specify Content](image)

For the three proposed design interfaces of privacy control for Friendship Page, we asked which interface participants liked better and why. Five participants liked Specify Audience best, four voted for Specify-Content, eight for All-or-Nothing, and three participants indicated he/she liked both Specify-Audience and Specify-Content. For participants who did not like the Friendship Pages at all, All-or-Nothing was a best choice because it was simple and powerful. Users would not need to adjust or customize privacy settings with extra efforts. However, some participants argued that All-or-Nothing lacked flexibility in terms of privacy control and decreased the social value of the Friendship Pages. Based on these considerations, they argued that fine-grained control features would be more desirable.

Combining all three designs, all participants agreed that they were capable to address privacy concerns and provide users with powerful control over their friendship information. Although users had different preferences over these three designs, the combination of them was appreciated by all users. In addition, one participant highlighted the need for restricting third party applications to access friendship information. Another participant suggested adding an anti-stalking feature which counted the times one viewer browsed a user’s Friendship Pages. If the user detected possible stalking behavior which was suggested by the excessively frequent views of friendship pages, he/she could choose to block that viewer.

DISCUSSION

Theoretical Implications

Friendship Pages reveal no more information substantially, but receiving critiques from both users and the massive media. As boyd (2008) pointed out, privacy in the context of OSNs is beyond the factual state of information disclosure and it is more about how users manage and experience their information and relationships with others. boyd further emphasized the role of perceived control over information in conceptualizing privacy on OSNs (boyd, 2008). Likewise, Hoadley et al. (2010) highlighted the importance of perceived information control and ease of information access in mitigating privacy concerns in the case of the News Feed privacy outcry in 2006. Our study also demonstrated the importance of understanding privacy control as a psychological perception instead of actual controllability.

An interesting theme emerged from the introduction of Friendship Pages is the concept of “friendship”. As indicated by our participants, the Friendship Pages provoked their considerations of trusted friends and associate others. Consequently, their behaviors altered from not thinking too much to add a friend, to being cautious in making new friends, and even screening existing friend list on Facebook.
Practical Implications

It is recognized that controlling information on OSNs has become more complicated than simply restricting access to audience (Egelman et al., 2011; Binder, Howes, & Sutcliffe, 2009). Sophisticate social relations of an individual user are correspondingly mapped into OSNs. Some substantial studies have investigated users managing privacy in multiple social spheres on OSNs. For example, Skeels and Grudlin (2009) surveyed Facebook users on how they managed privacy settings for their friends and coworkers respectively on Facebook. Similarly, in order to address the limitation of existing privacy settings in Facebook, Egelman et al. (2011) proposed a new interface for users to manage access control between overlapping social networks.

Friendship Pages also brought about similar predicament for access control. For a user’s friends and their friends of friends, they have either direct or indirect access paths to the user’s relationship information through the Friendship Pages. To facilitate interpersonal privacy management, our results suggest a combination of all-or-nothing and fine-grained privacy setting interfaces. The ability to facilitate users to expand interactions and enhance social capital of OSNs has been appreciated by many users. However, due to the limitation of privacy settings provided by OSNs practitioners, users often have to sacrifice either their privacy needs or social needs when managing access control. For example, a study performed by Strater and Lipford (2008) found that majority (over 72%) participants made their profiles completely open or restricted them to only their friends. Envisioning powerful but flexible privacy control is a key issue in designing usable access control mechanism.

CONCLUSIONS AND FUTURE WORK

Our work adds to the growing literature of privacy in the context of OSNs by investigating interpersonal privacy issues. The preliminary conceptual and empirical investigations lend a support to better define privacy in this domain. The development of design heuristics as well as evaluation of our preliminary designs could potentially alleviate users’ privacy concerns without sacrificing their social needs pertaining to friendship information. In future work, we will further examine the dynamics of users’ interpersonal privacy issues and plan to refine and improve our proposed privacy setting interfaces through a field experiment.

REFERENCES


