A New Social Order: Mechanisms for Social Network Site Boundary Regulation

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ABSTRACT

Social Network Site (SNS) use has become ubiquitous, with hundreds of millions of users sharing and interacting online. Yet, constant, unbounded sharing and interacting with others can cause social crowding and emotional harm (Altman 1975). We explore interpersonal boundary regulation on Social Network Sites to understand these tradeoffs and examine how to improve the social experiences of users. In this paper, we present a taxonomy of five categories of interpersonal boundary mechanisms relevant to SNSs and the specific interface controls that sites provide for managing these boundaries. We qualitatively research how SNS users employ these mechanisms and the boundary issues that arise while interacting online with others. These results present a first step towards a model of SNS interpersonal boundary regulation.

Keywords

Online Social Networks, Interpersonal Boundary Regulation, Interactional Privacy

INTRODUCTION

According to Neilson Media, Americans spend over a quarter of their time online engaged in social networking activities (2010). Facebook, the most popular Social Network Site (SNS), has over 500 million users worldwide (Hesse 2010). According to Facebook's CEO, Mark Zuckerberg, privacy is no longer the social norm: "People have really gotten comfortable not only sharing more information and different kinds, but more openly and with more people" (Matyszczyk 2010). Yet despite our propensity to share, comedian Jimmy Kimmel declared November 17, 2010 "National Unfriend Day" (Kitchen 2010) as a backlash against Facebook. His stance was that, "friendship is a sacred thing, and I believe Facebook is cheapening it." Some social scientists agree and have described SNS relationships as "brief and tangential" characterized with "ambient intimacy" (Hesse 2010) where we are surrounded indirectly by friends but lack true connection. Although online sharing may be the new social norm, disclosure does not equate to intimacy. In some cases, sharing too much can be detrimental to relationships (Petronio 2002). In fact, social psychology argues that interpersonal boundaries are vital to both personal well-being and relational development (Katherine 1991).

SNSs build social capital, the intrinsic value of participating in social exchanges, through emotional support, access to new information and people (Ellison, Steinfield et al. 2010), camaraderie, a sense of social identity, and more. Yet, "one of the most obvious issues emerging from the impact of social network site use is the challenge of drawing boundary lines that denote where relationships begin and end," (Child and Petronio 2010). Many of the backlashes against SNS use may be attributable to interpersonal boundary violations – when others become too close or too distant (Katherine 1991). For example, SNS users interviewed for this paper recounted negative interpersonal experiences including peer pressure, threats, lover spats, sexual advances, spam, trolling, "flame wars," privacy breaches, complaints, ridicule, and other "online drama" that resulted in feelings of disappointment, hurt, mistrust, and fear. Because of such negative experiences, SNS users are starting to become overwhelmed and disillusioned with their SNSs and resorting to actions that limit their own exposure. Some examples include hiding feeds, disabling Facebook walls or MySpace comments, taking "Twittercations," or even deleting one's account entirely. These approaches may help limit problems but at the potential opportunity cost of benefits from online social interactions.

Our research explores interpersonal boundary regulation as a way to balance the tradeoffs between the benefits and drawbacks individuals experience with SNSs. In effect, interpersonal boundary regulation is the process through which we manage our informational and interactional privacy. Boundaries are important because they help us define self, give us protection (physically and emotionally), help us manage our personal resources, and forge deeper relationships (Altman 1975; Katherine 1991; Petronio 2002). Our goal is to identify boundary regulation mechanisms that are relevant to SNSs and better understand how end users employ these mechanisms. Through the examination of both behavioral and technological mechanisms, we will be able to find ways to enhance these processes and inform environmental design considerations for

SNS interfaces. As Altman urged, "we should attempt to design responsive environments, which permit easy alternation between a state of separateness and a state of togetherness" (Altman 1975). Only then will SNSs succeed in transforming "ambient intimacy" (Hesse 2010) into true closeness with others.

In this paper, we present a taxonomy of five categories of boundary mechanisms: network, territorial, disclosure, relationship, and interaction, along with the specific controls provided by sites for managing each of those boundary mechanisms. We also show anecdotal evidence from SNS users that suggests boundary regulation is a mounting concern that, if improved, could serve to enhance SNS user experience and possibly facilitate true connection through online social networking.

MOTIVATION AND BACKGROUND

According to Altman's seminal work *The Environment and Social Behavior*, "interpersonal boundary regulation" is the key to maintaining appropriate levels of interaction within one's social environment. He views boundary regulation as a dialectal process where we dynamically change our desire for social interaction and thus must continually negotiate our boundaries with others. Therefore, privacy is conceptualized as "an interpersonal boundary process by which a person or group regulates interaction with others," by altering the degree of openness of the self to others (1975). The primary mechanisms of interpersonal control used to negotiate boundaries in Altman's model were personal space, territory, verbal behavior, and nonverbal behavior. However, Altman's work was specific to the context of the physical environment, and many of these mechanisms no longer apply to environments like Facebook. The tangibility yet lack of physicality of SNSs changes the overall dynamics of the boundary regulation process. Similarly, many boundary mechanisms that have been developed within SNSs are often not behaviors we see in the physical world.

A Social Network Site has the following characteristics: 1) a public or semi-public profile, 2) an explicit way to connect and interact with others, and 3) a means of traversing this connection-based network (boyd and Ellison 2007). Numerous examples exist of how interpersonal boundaries are blurred within SNSs. For instance, we have developed online social norms such as "hyperfriending" (Fono and Raynes-Goldie 2006) where only 25% of our online connections represent true friendship (Zinoviev and Duong 2009). Studies have shown that social pressures influence us to accept friend requests from "weak ties" as well as true friends (boyd 2006; Brzozowski, Hogg et al. 2008). One of the biggest criticisms of SNSs are that they often simplify relationships to a "binary" (boyd 2004) or "monolithic" (Brzozowski, Hogg et al. 2008) dimension of friend or not friend. Due to this collapsed context of our relationships, we often allow acquaintances, family, friends, and coworkers the same level of access to ourselves, which negates the dialectical nature of boundary regulation.

Very little research deals specifically with SNSs and interpersonal boundary regulation. Child and Petronio apply the theory of Communication Privacy Management (CPM) (Petronio 2002) to the context of social media and blogging (Child and Petronio 2010). CPM was based on Altman's idea of boundary regulation, but it focuses solely on the ownership and disclosure of private information (Petronio 2002). Similarly, Stutzman examined the creation of multiple profiles on social media websites, primarily Facebook, as an information regulation mechanism. Through grounded-theory, he identified three types of boundary regulation within this context (pseudonymity, practical obscurity, and transparent separations) and four over-arching motives for these mechanisms (privacy, identity, utility, and propriety). He also found that technical skill level mediated the effectiveness of this practice and that the burden of using this technique to manage personal disclosures was proportional to the size of one's network (Stutzman and Hartzog 2009). Our work seeks to take a broader view of boundary regulation and identify a wide variety of mechanisms that are relevant to SNSs and better understand how end users employ these mechanisms.

METHODOLOGY

Three qualitative approaches were combined to derive five categories of boundary regulation mechanisms. First, we reviewed literature from three main areas: interpersonal boundaries, online social networking, and boundary regulation within social media. Much of the SNS research focuses on disclosure boundaries, which is one of the five boundary mechanisms we present below (Stutzman and Hartzog 2009; Child and Petronio 2010). Second, we performed an interface analysis of five popular Social Network Sites (Facebook, MySpace, LinkedIn, Hi5, and Ning) to compare and contrast current technological affordances for interpersonal boundary regulation. We did this through a systematic feature exploration and comparison using an active account on each SNS, and available mechanisms were grouped conceptually. Third, we conducted semi-structured interviews of SNS users in order to glean more detailed SNS user perspectives. Interview participants were recruited via email and recruitment postings on Facebook. Each participant was required to read and sign a form of informed consent before participating in the study. Interviews were conducted via Skype or email. Interview duration ranged from 15 minutes to an hour and a half. Interviews were transcribed using InqScribe and qualitatively coded using Atlas.ti 5.5. Quotes and anecdotes from participants are presented using a pseudonym first name for anonymity and consistency throughout this paper. Currently, we have collected interview data from 11 participants, 6 females and 5 males. The average age of our

participants is 36 years old with ages ranging from 28 to 59 years old. Participants primarily used Facebook, with 8 logging in daily, and 5 participants also using MySpace, and 4 LinkedIn. Participants also reported a variety of other sites, including Ning, Twitter, LibraryThing, Shelfari, Xanga, and others. With the results from these interviews, we further refined the boundary mechanism categories, added additional mechanisms, and identified a variety of boundary regulation issues that participants have experienced.

RESULTS - BOUNDARY MECHANISMS

Network Boundaries

Network boundaries are mechanisms to demark separation between one's connections or groups of connections. Due to how SNSs articulate one's network structure unlike any other online or offline environment, SNS users now have to manage this transparency. We uncovered two types of network boundary mechanisms in our study: whole network and partial network boundaries. Whole network boundary mechanisms limit access to one's entire network indiscriminately across all connections. Only Facebook and LinkedIn provide options to explicitly do this. Otherwise, friend list visibility is tied directly to the access level of one's entire profile. Partial network boundary mechanisms allow an SNS user to hide individual connections from one another. Facebook was the only SNS which both exposed and allowed the option to hide partial network ties such as family and relationship connections. Table 1 summarizes network boundary mechanisms and interface controls available within each SNS for managing this type of boundary.

Participants expressed concern of different social circles interacting with the potential to cause conflict. As a minister, Steve finds this a very difficult situation. He explained that, "I have friends and relatives who are at extreme opposites religiously and politically. Some of my close friends have asked me about distant relatives. That was a bit awkward. A close friend asked me once, "Who ARE those people and why are they so angry all the time?" Due to the differences between his Facebook friends, he said, "it is very likely to lead to a heated, sometimes hateful confrontation between my 'friends'. I really don't like that!" However, the serendipitous discovery of unknown relationships tended to outweigh the potential risks for SNS users when it comes to network boundaries. For example, Becky was amused that, "I discovered that a girl I know from roller derby is 'friends' with the woman that runs the burlesque show I attend - never would have thought that one!"

Mechanism	Controls	Facebook	MySpace	Hi5	LinkedIn	Ning
Network						
Whole	Access Level – Friend List	X				
	Access Level – Profile		X	X		X
	Hide Connections/Disable with CSS		X	X	X	
Partial	Access Level – Family	X				
	Access Level – Relationships	X				

Table 1: SNS Mechanisms and Controls for Network Boundaries

Territorial Boundaries

Territorial boundaries involve "use of places and objects in the environment" to personalize or mark, "ownership, possession, and occasional active defense" (Altman 1975). We found two types of territories in use – inward facing territories and outward-facing territories. Table 2 summarizes the SNS Interface controls that support territorial boundary setting behavior mechanisms.

Mechanisms	Controls	Facebook	MySpace	Hi5	LinkedIn	Ning
Territorial						
Inward-Facing	Filters	X	X	X	X	
	Preference Settings		X	X	X	
	Hiding	X	X		X	
Outward-Facing	Access Level - Viewing Permissions	X	X	X		X
	Remove/Delete Posts or Comments	X	X	X	X	X
	UnTagging	X	X	X		
	Moderation		X	X		X

Table 2: SNS Mechanisms and Controls for Territorial Boundaries

Inward facing territories represent users' views into the up-to-date happening's within their SNS, such as Facebook's "News Feed," LinkedIn's "Updates," Hi5's "Network Updates," MySpace's "Stream," and Ning's "Latest Activity." Things that friends share include status updates, photo uploads, links, videos, new connection updates, and more. Managing inward-facing boundaries is thus about controlling which information appears through two mechanisms: filters and preference settings. Filters provide a temporary boundary, while managing preference settings gives users more permanent control over what appears and from whom.

Outward-facing territories, such as Facebook's "Wall", can be considered a dynamic representation of a user and their SNS activities. A unique characteristic of SNSs is that others can interact within our personal outward-facing territories, thereby changing how others perceive us. The various SNSs differ on how much they let others interact with a user's outward-facing personal space by default. For instance, Facebook gives one's friends the ability to post text, photos, and links directly on one's Wall, tag pictures of that person that show on one's Wall, and "Comment" or "Like" content posted on one's Wall. Problems thus occur when what others post conflicts with what a user wishes to portray. For example, Allen's cousin briefly became a Neo-Nazi and continually posted hate doctrine, so Allen felt, "I had to apologize to a slew of people who he had met at parties here, and I felt like I was the Nazi, or that it was my Facebook spewing hate."

Interview participants managed their outward facing boundaries in different ways. Four participants cited instances where they had to delete inappropriate content posted to their Wall. Three participants concluded that they would confront the offender in person depending on their relationship. On the other hand, some participants chose to take more passive approaches. Three of the participants said they mainly "skim" or "ignore" inappropriate content posted on their Walls. Lynn explained, "I don't let things bother me too much. I have a friend, he is the rudest guy, I just leave him be because he is being honest, being real about stuff ... But it does bother me sometimes."

Disclosure Boundaries

Disclosure boundaries are probably the most talked about privacy boundaries we erect in our SNSs because, for the most part, everyone believes in some level of control when it comes to divulging such personal information (Petronio 2002). For example, one study found that Facebook users were most concerned with strangers locating them and so they wanted to protect the disclosure of contact information (Strater and Lipford 2008). Thus, on most SNSs, disclosure boundary mechanisms are considered one's "privacy settings." We examined two types of disclosure boundaries: Self-disclosure involving private information about one's self, and Confidant-disclosure mechanisms to set boundaries for information that is co-owned or shared by others (Petronio 2002).

Overall, there are two dimensions that vary with each SNS. The first is the level of granularity and type of information that one can share with others. Facebook is the most complex, allowing users to disclose and control more granular boundaries for categories such as Bio, Website, Email addresses and 8 other categories. Others have fewer information groupings. The second dimension is who one can share this information with. All the SNSs examined allow users to give access to "Everyone" or "All Users." Similarly, all these SNSs give the option for access for "Friends" or "Connections" only. MySpace is unique in that it provides an option for "Everyone 18 and Older." Overall, Facebook gives the most flexibility by giving users even more options for controlling personal information. Facebook users can customize privacy settings by group, network, or down to an individual level (Table 3).

Privacy Level	Facebook	MySpace	LinkedIn	Hi5	Ning
Everyone	X	X	X	X	X
Friends	X	X	X	X	X
Everyone 18 and Older		X			
Friends of Friends	X				
Friends and Networks	X				
Specific Individuals	X				
Only Me	X		X	X	X

Table 3: Self-Disclosure by Access Level

SNS users were unconfident or skeptical about their SNS privacy settings and tended to not take advantage of the granularity and access levels provided to manage disclosure boundaries, even when the controls were available. Often, participants did not know that private information was being shared at all and blamed the site. The lack of confidence in SNS privacy settings led many of the participants to manage self-disclosure boundaries by restricting the information they shared. Gina explained, "I don't post things because my husband says they will follow me forever."

Confidant-disclosures can occur when a connection posts one's personal information so that it is viewable for others to see, such as tagging pictures of friends without their permission. Generally, the same mechanisms that are used to form outward-facing territorial boundaries are the same ones SNS users employ to create confidant-disclosure boundaries (Table 2). The distinction is that confidant-disclosure focuses on the disclosure of private information of oneself by others. Overall, our participants exhibited a general trust towards those in their social networks to not breach confidant-disclosure boundaries which was consistent with past research (Besmer and Lipford 2010). Kristine explained, "Most people are pretty good. And I think that is also because so many people are friends with people who are family and you know people from high school or whatever."

Relationship Boundaries

Relationship boundaries are negotiated when deciding to form a relationship and subsequently when defining the appropriate context for that relationship. Therefore, friending and unfriending are important mechanisms for SNS relationship boundaries as well as managing individual relationships once part of one's network. Individuals have different levels of boundary permeability when choosing whom to friend. Our participants who had fairly public careers and used their social networks as an extension of their profession tended to have more open friendship boundaries. For instance, Lynn, a photographer, commented that her social network was comprised of, "honestly mostly strangers right now. That's just because mainly I get friend requests from mothers and kids who need pictures, so I kind of have to let them in." In addition, our participants required very strong reasons to go as far as unfriending someone. Three participants claimed they had never unfriended anyone. Individuals would unfriend due to unacceptable behavior from weak ties but not from stronger ones. Steve explained, "The only reason I would 'unfriend' someone is if they were obscene or rude, and I didn't really know them well. I have relatives who are obscene and rude but I ignore them or hide them." Based on the responses, unfriending is often seen as negative consequence instead of as a neutral relationship boundary. Similarly, many users chose to leave unwanted friend requests pending instead of explicitly denying them.

The context of a relationship impacts our boundary regulation process. SNSs provide varying solutions for further defining a relationship boundary once a connection has been made. Several sites allow users to create friend categories – for example: "College Buddies" or "Co-Workers." All the SNSs except Ning allow users to label friend groups for personal use. However, only Facebook lets users utilize those friend groups to set access levels for sharing items such as status updates, contact information, and pictures. Table 4 includes a summary of all the relationship management controls available within each SNS.

Mechanisms	Controls	Facebook	MySpace	Hi5	LinkedIn	Ning
Relational						
Connection	Access Level - Friend Request Ignore/Leave Request Pending	X X	X X	X X	X X	X
	Deny Friend Request Unfriend/Remove Connection	X X	X X	X X	X X	X X
	Group Labeling/Filtering	X	X	X	X	
Context	Group Management	X				

Table 4: SNS Mechanism and Controls for Relational Boundaries

Even though relationship context is so important to regulating interpersonal boundaries, the majority of our participants did not manage relationship context within their SNSs at all. In some cases, this may be due to the lack of technological affordances provided by the SNS, but even when the affordances were provided, they were not widely used. Seven of our participants said they did not have separation between their various social contexts. While Antonio is very adamant about real world separation between work and pleasure, it is not reflected in his SNS behavior. "I keep my social and professional network separate for this reason. Friends are friends. Business is Business. I do not like to mix," said Antonio. However, when asked how he managed SNS behaviors based on relationship context he replied, "To be honest, I do not have a separation of information between groups." Ultimately, this may be the most telling reason for the lack of intimacy experienced within SNSs. Because interactions lack context, SNS users tend to make those interactions more generic and less personalized losing an aspect of interpersonal intimacy.

Interactional Boundaries

Interactional boundaries limit direct access to oneself thereby avoiding the need for other types (i.e. relational, territorial, etc.) of boundary negotiation with others. SNS users can erect interactional boundaries by disabling interactive interfaces such as one's Facebook Wall or MySpace Comments. Also in "Things others share" Facebook allows users to specify whether or not one's friends "can comment on posts," "Suggest photos of me to friends," and "Friends can check me in to Places." Hi5 gives users the ability to disable receiving friend requests at all. The most drastic form of interactional boundary management is "Blocking." When one blocks another user that user cannot view or contact that person at all. LinkedIn is unique that it does not provide any controls for interactional boundary regulation, perhaps because of the more limited interactions provided by a site aimed at business professionals (Table 5).

Mechanisms	Controls	Facebook	MySpace	Hi5	LinkedIn	Ning
Interactional						
Disabling	Disable Search (Finding You)	X				
	Disable Posts/Commenting	X	X	X		
	Disable Tagging	X				
	Disable Friend Requests			X		
Blocking	Blocking	X	X	X		X

Table 5: SNS Mechanism and Controls for Interactional Boundaries

Participants often failed to negotiate boundaries with others and, once they felt violated, they blocked them completely through actions such as disabling comments on their Facebook Wall, unfriending, or blocking. Allen explained, "I do not feel safe or trustful of [people] to NOT post bad things on my statuses and photos. I turned off my wall on Facebook as a result." Numerous times, participants experienced a boundary violation and immediately severed the relationship instead of

negotiating more appropriate boundaries for future interactions. Ironically, Whitfield pointed out that a healthy "boundary is not a wall" (1993). By disabling the ability to interact, these users virtually limit the positive benefits of social networking as well as the negative ones. Richard chooses not to partake in online social networking, but he admitted, "It is very difficult maintaining this outlook sometimes, as I do feel left out when the majority of my personal friends are sharing their lives with each other online, and I am not included."

DISCUSSION

Our taxonomy of boundary mechanisms demonstrates the variety of boundary behaviors that users need to manage and negotiate through the affordances of the SNS environment. Some, such as network and relationship boundaries, have few offline equivalents as we rarely explicitly write down and display our social networks in the physical world. Sites do provide a variety of mechanisms for managing each of these boundaries. In some cases, there may be some overlap in these mechanisms such as the use of outward-facing territories for managing confidant disclosures. SNS users employed these mechanisms at different levels and often replaced one strategy with another when it proved ineffective. For instance, Kristine has very open relationship boundaries as she accepts almost all friend requests even from strangers. However, she compensates for this by having very closed self-disclosure boundaries. Alternatively, Lynn also has open relationship connection boundaries, but she manages her interactions heavily through relationship context. She said, "I put everybody in groups, so if I get a stranger I don't know I just kind of put them in [that] group and that means they can only see their pictures. I group."

In some cases, participants had clearly defined rules for setting boundaries. However, other cases, such as managing relationship context to set boundaries, many individuals had not developed any rules. We observed that participants lacked awareness of possible boundary violations or the mechanisms provided by SNSs for boundary regulation. For instance, Fred said that he no longer posts when he is out of town on his Facebook status because he did not want his whole social network to know. He was unaware that friends could be grouped and that he could customize the status to only be visible within certain groups. Many participants expressed discontent with social interaction within their networks, but decided that the cost of doing something about it was higher than their discomfort. Therefore, they adjusted their boundaries by limiting their interactions instead of asserting them by using the available SNS mechanisms. For example, "I take Twitter-cations where you don't go on for a while. Sometimes if I am feeling down or depressed, I don't want to go on Twitter and Facebook," said Kristine. When cognizant of risks, SNS users resorted to extreme blocking measures that inhibited any future social interaction with others. Ultimately, some decided that the best measure was to deactivate their SNS accounts indefinitely. As one participant who opted out of online social networking commented, "to date, the cons still outweigh the pros." Overall, these coping mechanisms show a lack of sufficient interpersonal boundary mechanisms available within SNSs that allow for negotiation toward a desired level of social interaction with others.

CONTRIBUTION AND CONCLUSION

Boundary mechanisms used in the physical world do not translate well to the new world of online social networking thus need to be understood in this new context. Our research presented a taxonomy of five emerging categories of interpersonal boundary mechanisms relevant to SNSs through a qualitative review of SNS interface controls and SNS end user behaviors. We found that network, territorial, disclosure, relationship, and interactional boundaries can be employed individually and in combination by end users who want to better regulate their social boundaries with others. However, in many cases, this process breaks down creating interpersonal conflict due to a lack of awareness of SNS interface capabilities or the risks associated with a failure in boundary regulation. At times, SNS interfaces provide little or no control to support interpersonal boundary regulation. This taxonomy is a first step towards a theoretical understanding of how SNS users regulate their interpersonal boundaries. It serves as a foundation to build additional SNS boundary regulation theories for online social networking and as a basis for the design of improved SNS interfaces. We plan to develop a model of interpersonal boundary regulation within SNSs and relate this to various social networking outcomes such as self-esteem, intimacy, and social capital. This is forthcoming in our current research (Wisniewski 2011). In this paper, we motivated the need for design considerations that can improve support for these mechanisms as SNS users are struggling to negotiate their social interactions online. We believe a better understanding of interpersonal boundary regulation within SNSs incorporated into interface design can help users achieve a deeper level of connection while also protecting themselves from harmful interactions with others.

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